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CSI WORK PLAN

Caldwell Systems, Inc. Site
Lenoir, North Carolina

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FEBRUARY 1992
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CONESTOGA-ROVERS & ASSOCIATES

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1.0 INTRODUCTION

The following Work Plan, entitled "CSI Work Plan, Caldwell Systems, Inc. Site, Lenoir, North Carolina", prepared by Conestoga-Rovers & Associates (CRA), on behalf of the Caldwell Systems Site Steering Committee (Steering Committee), presents a detailed summary of the existing conditions at the Caldwell Systems Incorporated Site (Site), a comprehensive discussion of available Site-specific data, a detailed sampling and analysis plan (SAP) and a discussion of potentially feasible remedial alternatives based on the existing data.

Information used for the preparation of this Work Plan has been obtained from the following documents:

1. *Interim RCRA Facility Assessment Report, Caldwell Systems Inc., Lenoir, North Carolina 28645*, dated October 1987, prepared by A.T. Kearney, Inc.

2. *RCRA Case Development Investigation/Evaluation, Caldwell Systems, Inc., Lenoir, North Carolina*, dated January 29, 1988, prepared by USEPA.

3. *Final Sampling Investigation Report, Caldwell Systems, Inc., Lenoir, North Carolina*, dated November 16, 1988, prepared by PRC Environmental Management Inc.

4. *Work Plan for the Sampling Investigation at the Caldwell Site, Lenoir, North Carolina,* dated September 1990 and Associated Appendix A Field Health and Safety Plan, prepared by USEPA.

5. USEPA analytical data assumed generated based upon implementation of "*Work Plan for the Sampling Investigation at the Caldwell Site, Lenoir, North Carolina*", prepared by USEPA, data dated October/November 1990.

6. *Final Report, Listing Site Inspection, Caldwell Systems, Inc., Lenoir, Caldwell County, North Carolina, Volume I,* dated October 31, 1990, and Volume II dated October 30, 1990, prepared by NUS Corporation.

7. *Final Report, Listing Site Inspection, Limited Scope Phase II, Caldwell County Landfill, Lenoir, Caldwell County, North Carolina,* dated January 23, 1991, prepared by NUS Corporation.

8. *Sampling Investigation Report for the Caldwell Systems Inc. Site, Lenoir, Caldwell County, North Carolina,* dated August 1991, prepared by USEPA.

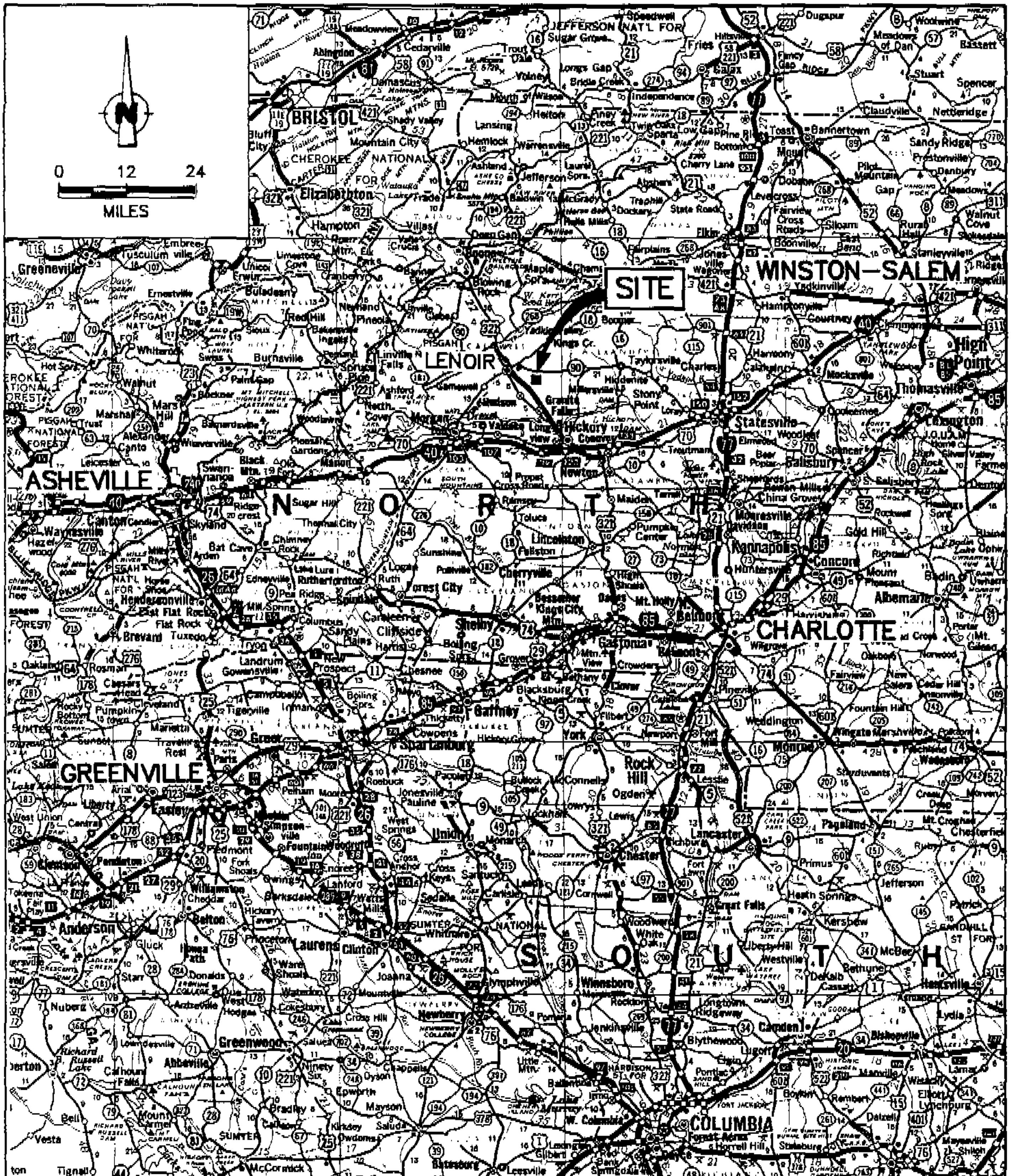
9. Miscellaneous background information related to Item 8, supplied to CRA by USEPA in October 1991.

2.0 SITE BACKGROUND

2.1 SITE LOCATION

The Site is located on Mt. Herman Road (otherwise known as Dragstrip Road) in Caldwell County, North Carolina, approximately five miles southeast of Lenoir. The Site occupies approximately 1.2 acres in the west-central portion of an approximately 148-acre parcel of land owned by Caldwell County. The Site is bordered on the east by the Caldwell County landfill which encompasses approximately 103 acres, on the west by the former Haas dairy farm which occupies approximately 44 acres, and on the south by Caldwell County's maintenance building. The location and orientation of the Site are presented on Figure 2.1 and Plan 1, respectively.

Land use within one mile of the Site consists of the Caldwell County landfill, low-density housing, light agriculture and a dragstrip. The Mt. Herman subdivision is located approximately one-half of a mile to the southwest of the Site. Reportedly, most residents within approximately four miles of the Site receive drinking water from one of five municipal water systems, specifically Caldwell County Water, Lenoir City Water, Hudson Public Works, Saw Mills Water and Joyceton Water. Lenoir receives all of its potable water from a location on the Catawba River, and sells water to Caldwell County, Hudson, Saw Mills and Joyceton. The Caldwell County, Hudson and Saw Mills water systems do not obtain water from any additional sources; however, Joyceton has two municipal wells



SOURCE: GOUSHA ROAD ATLAS, 1991

figure 2.1

SITE LOCATION
CALDWELL SYSTEMS, INC. SITE
Lenoir, North Carolina

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approximately two to three miles from the Site. These wells comprise approximately 50 percent of Joyceton's entire water system.

Most residents within four miles of the Site who are not serviced by a municipal water system obtain potable water from private wells. Some residents obtain their water from springs. Several residents in the Mt. Herman subdivision use private wells as a source of potable water. The nearest potable well to the Site is located at the Martha McLean residence, approximately 1,500 feet southwest of the Site.

2.2 OPERATIONAL AND REGULATORY HISTORY

An incinerator at the Site was constructed and operated by Caldwell County in March 1976, for the incineration of wastes such as solvents, paints, and lacquer dusts from local industries. In March 1977, the facility was leased to Caldwell Systems, Incorporated (CSI).

On August 4, 1980, CSI submitted to USEPA, a Resource Conservation and Recovery Act (RCRA) Part A permit application to operate as an "interim status" facility, and identified the facility as a hazardous waste management facility. The primary services offered by CSI were the incineration and treatment of liquid and solid wastes, including wastes such as solvents, waste oils, paints, sludges, tank bottoms, contaminated fuels, resins, glues, and miscellaneous wastes from hazardous waste sites.

In July 1982, the North Carolina Department of Human Resources (NCDHR), Solid and Hazardous Waste Management Branch, requested CSI to submit a RCRA Part B permit application to operate as a RCRA-permitted treatment/storage/disposal (TSD) facility. In January 1983, CSI submitted the first version of a Part B permit application. After correcting a number of deficiencies and re-submitting the Part B application several times and following the addition of the north tank farm area and completion of substantial modifications to upgrade the incinerator unit, a final form of the Part B permit application was submitted to NCDHR in August 1987. Approval of the application was contingent upon the outcome of a trial burn which was scheduled for the fall of 1987. Following completion of the trial burn, a trial burn report was submitted in January 1988 to the NCDHR. CSI continued to operate the incinerator under the Part A interim status standards.

In response to citizen complaints, concern for release of hazardous materials to the environment, the results of a RCRA Facility Assessment performed by USEPA, and other investigations performed under the direction of USEPA, the Caldwell County Health Department, in May of 1988, ordered CSI to discontinue incineration operations.

On November 8, 1988, CSI submitted a revised RCRA Part A application, and continued to operate the facility as a hazardous waste storage and treatment facility for blending, storing, and treating wastes. The Part A permit application was revised and re-submitted to USEPA at least once (on or about February 14, 1989), presumably due to additional facility operation changes.

Due to the emission of toxic and noxious fumes resulting from a fire in a roll-off box on September 13, 1989, local citizens were evacuated from the area. On September 28, 1989, Caldwell County Superior Court ordered CSI to discontinue operations and remove all wastes from the facility by December 1, 1989. CSI complied with the order, and at the request of the State of North Carolina, submitted a RCRA Closure Plan to the State of North Carolina and USEPA. The closure plan required the decommissioning of all equipment and the removal of all residual hazardous wastes. Containerized liquids and sludges from storage tanks were removed. In addition, some of the process equipment and tanks were subsequently decommissioned and removed from the Site.

On April 17, 1990, USEPA issued a RCRA 3008(h) Administrative Order (Order) to CSI, as operator of the CSI facility, and Caldwell County as owner. The Order directed CSI and Caldwell County to perform Interim Corrective Measures, perform a RCRA Facility Investigation (RFI), perform a Corrective Measures Study (CMS), and perform a Corrective Measures Implementation (CMI) to complete the corrective measures recommended in the CMS or other remedial responses. CSI and Caldwell County have both responded to the Order and have requested a hearing. On May 8, 1991, USEPA issued another RCRA 3008(h) Administrative Order with the same directives as the April 17, 1990 Order with the sole Respondent listed as Charles B. Foushee, Jr., as operator of CSI.

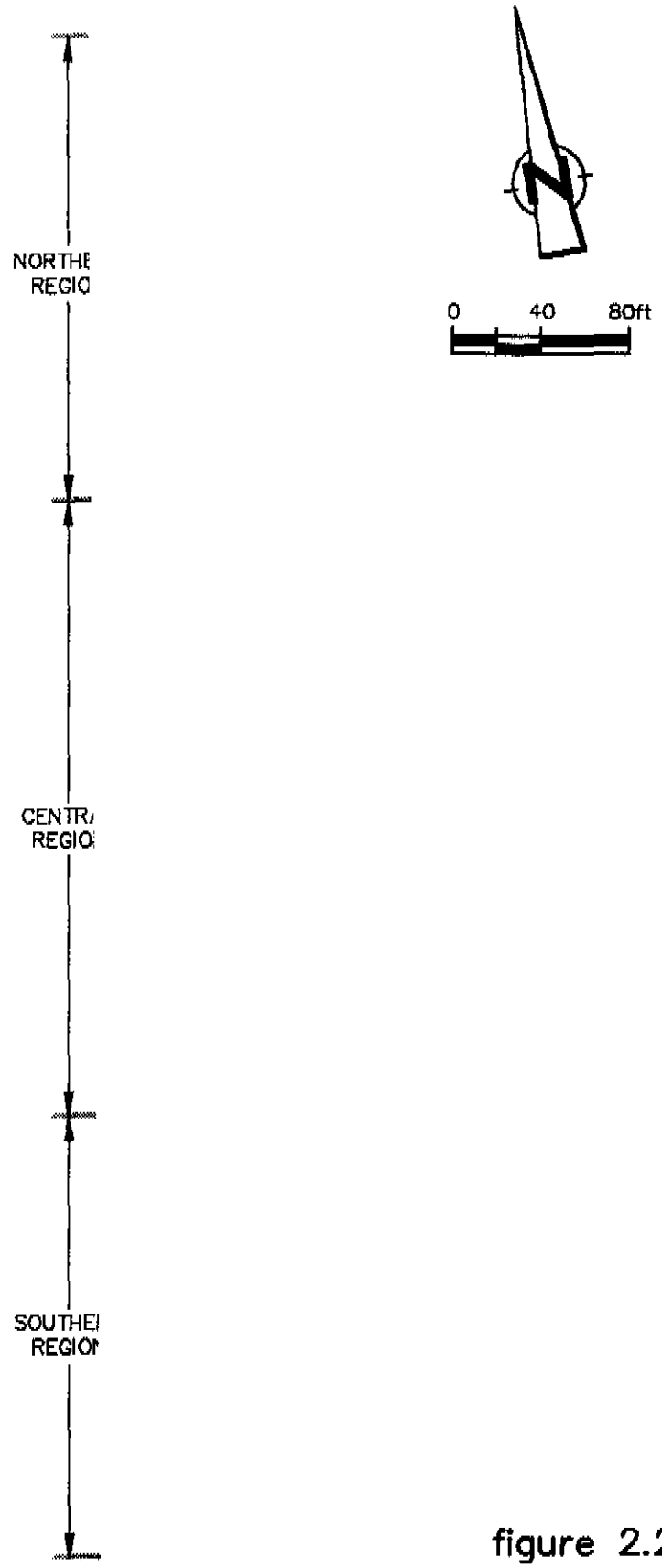
CSI has recently or is currently removing selected process equipment and/or structures from the Site. The major equipment and

structures which were remaining on the Site, as of October 16, 1991, include the following:

- a large aluminum building underlain by a concrete floor (referred to as the "new tank farm");
- a large open-sided former tank farm and drum handling area, covered by a metal roof and underlain by a concrete floor slab with drainage sumps;
- several empty and/or partially dismantled tanks and miscellaneous piping, pumps and equipment;
- a dismantled incinerator unit;
- an underground former fuel storage tank;
- an underground washwater holding tank;
- an underground septic tank;
- approximately 165 drums containing used personal protective equipment, soil auger cuttings and groundwater generated by the installation and development of monitoring wells, and approximately six drums of unknown materials; and
- a series of trailers previously used as offices and a laboratory during CSI's operations.

2.3 PROCESS DESCRIPTIONS AND WASTE STREAM CHARACTERISTICS

Prior to 1987, liquid wastes received by tankers at the Site were transferred to tanks situated in the old tank farm, as shown on Figure 2.2. From the old tank farm, wastes were transferred, presumably via



Source : Adapted from figur
Final Sampling Inve
dated November 16

figure 2.2

FORMER SITE LAYOUT
CALDWELL SYSTEMS, INC. SITE
Lenoir, North Carolina

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pipes, to the incinerator unit located in the central portion of the facility, for treatment. Following construction of a new tank farm near the northern portion of the Site in 1987, liquid wastes received at the Site via tankers were transferred to tanks within the new tank farm area for blending prior to transfer via feed lines to the incinerator. Following discontinuation of incineration operations in 1988, the blended wastes were transferred from the tanks to tankers and shipped off Site as a hazardous waste fuel supplement.

Drums received at the Site were placed in the drum storage and bulking area, where pumpable liquids were removed for blending and incineration. Non-pumpable wastes were transferred to a roll-off box staged at an area east of the incinerator and subsequently disposed of off Site at an approved hazardous waste landfill. Empty drums were temporarily stored at a location on the concrete plant slab southwest of the incinerator, or alternatively, on the ground at a location near the southeastern portion of the Site, prior to shipment off Site for recycling or disposal.

Reportedly, according to the Part A permit application form submitted to USEPA in 1980, CSI handled primarily flammable (D001) or reactive (D003) wastes, or nonhalogenated and halogenated solvents (F001 through F005). Based on a Part B permit application (assumed from 1987), additional waste streams, as identified in Table 2.1, were received at the facility. Based on a Part A permit application submitted to USEPA on or about February 14, 1989, following discontinuation of incineration operations in May 1988, CSI handled the waste streams identified in Table 2.2.

TABLE 2.1

LIST OF WASTES RECEIVED, STORED AND TREATED
BY CALDWELL SYSTEMS, INC. (1987)

Waste	*USEPA Hazardous Waste No.*	*Hazard Code*
Lacquer Chips	D001	Ignitable
Tank Cleaning Leaded Gasoline	D008	EP Toxic
Waste Ink	D001	Ignitable
	K086	EP Toxic
Waste Oil	D001	Ignitable
Waste Paint (solvent base)	D001	Ignitable
		Appendix VII
Waste Paint (water base)	D008	EP Toxic
Waste Paint Sludge	D001	Ignitable
	D008	EP Toxic
Waste Resin	D001	Ignitable
Waste Solvent (halogenated)	F001	EP Toxic
	F002	
Waste Solvent (non-halogenated)	F003	Ignitable
	F005	
Wastewater w/Ba	D005	EP Toxic
Wastewater w/Cd	D006	EP Toxic
Wastewater w/Cr	D007	EP Toxic
Wastewater w/Pb	D008	EP Toxic
Wastewater w/Hg	D009	EP Toxic
WWTP Sludge	F006	EP Toxic
Otto Fuel	D003	Reactive
Waste Alkaline Solutions	D002	Corrosive
Waste Cresols	F004	EP Toxic
Wastewater w/As	D004	EP Toxic
Waste Acetone	U002	Ignitable
Waste Benzene	U019	EP Toxic
Waste Ethyl Acetate	U112	EP Toxic
Waste Formaldehyde	U122	EP Toxic
Waste Methanol	U154	Ignitable
Waste Methyl Ethyl Ketone	U159	Ignitable
Waste Phenol	U188	EP Toxic
Waste Phthallic Anhydride	U190	EP Toxic
Waste Toluene	U220	EP Toxic
Waste Toluene Diamine	U221	EP Toxic
Waste Toluene Diisocyanote	U223	EP Toxic
Waste Xylene	U239	Ignitable
Waste Creosote Bottoms	K001	EP Toxic
Waste Slop Oil	K049	EP Toxic
Leaded Gas Tank Residues	K052	EP Toxic
Coking/Tar Residues	K087	EP Toxic
Waste Aniline	U012	EP Toxic
Waste Methylene Chloride	U080	EP Toxic
Waste Lead Acetate	U144	EP Toxic
Waste Trichloroethene	U228	EP Toxic

Source: Interim RCRA Facility Assessment Report, Caldwell Systems, Inc., Lenoir, North Carolina 28645, dated October 1987, prepared by A.T. Kearney, Inc..

TABLE 2.2

LIST OF WASTES RECEIVED BY CALDWELL SYSTEMS, INC.
(FEBRUARY 1989)

USEPA Hazardous Waste No.	*Hazard Code*
D001	Ignitable
D002	Corrosive
D003	Reactive
D004	Toxic (Arsenic)
D005	Toxic (Barium)
D006	Toxic (Cadmium)
D007	Toxic (Chromium)
D008	Toxic (Lead)
D009	Toxic (Mercury)
F001	Toxic
F002	Toxic
F003	Ignitable
F004	Toxic
F005	Toxic, Ignitable
F006	Toxic
K001	Toxic
K049	Toxic
K052	Toxic
K086	Toxic
K087	Toxic
U002	Ignitable (Acetone)
U012	Ignitable, Toxic (Aniline)
U019	Ignitable, Toxic (Benzene)
U080	Ignitable, Toxic (Benzene)
U112	Ignitable (Ethyl acetate)
U122	Toxic (Benzo[a]pyrene)
U144	Toxic (Lead acetate)
U154	Ignitable (Methanol)
U159	Toxic, Ignitable (2-Butanone)
U188	Toxic (Phenol)
U190	Toxic (Phthalic anhydride)
U220	Toxic (Methyl benzene)
U221	Toxic (Ar-methyl benzene diamine)
U223	Reactive, Toxic (1,3-Diisocyanatomethyl benzene)
U228	Toxic (Trichloroethene)
U239	Toxic, Ignitable (Dimethyl benzene)

In 1986, CSI performed chemical analyses on five of their common waste streams. Reportedly, these chemical analyses indicated that the primary volatile organic compounds in the wastes included toluene, total xylenes, styrene, 4-methyl-2-pentanone (MIBK), ethyl benzene, 1,1,1-trichloroethane, carbon tetrachloride and acetone. The analyses indicated that the base, neutral and acid extractable compounds included only naphthalene above quantitative limits; however, a number of phenolic compounds and polyaromatic hydrocarbons were noted at levels below quantitation limits.

2.4 SUMMARY OF PREVIOUS SAMPLING INVESTIGATIONS

2.4.1 Overview

Starting in the fall of 1987, a number of investigations have been undertaken by the USEPA or their contractor(s). Objectives for the various investigations appeared to vary widely and a diverse investigative database has resulted. This subsection discusses, chronologically, the historical investigations.

2.4.2 RCRA Case Development Investigation/Evaluation

On September 15-16, 1987, the United States Environmental Protection Agency (USEPA) Environmental Services Division (ESD), Hazardous Waste Section (HWS), and Waste Management

Division, RCRA Branch conducted a case development investigation at the Site. The objectives of the investigation were as follows:

(1) to determine if materials spilled at the facility had migrated from the Site; and

(2) to characterize the groundwater springs located on the Truitt Haas property located adjacent to the Site.

Analytical results from this investigation are presented on Plan 8 and discussed in Sections 4.3 and 4.6 for soil samples and springs, respectively.

2.4.3 Department of Environmental Management (DEM) Sampling Investigation

Due to reports of heavy vegetative damage and large amounts of particulate deposits on the leaves of trees located in the vicinity of the Site, members of the Air Toxic Unit of the Division of Environmental Management (DEM) Air Quality Section collected leaf samples from oak and tulip poplar trees on September 22, 1987. Leaf samples were collected from selected trees in a total of four areas located in Caldwell, Burke and Davie Counties.

Upon analysis, the particulate deposits on the leaves were found to contain cadmium, chromium, barium and lead at concentrations ranging from 2 to 435 ppm.

2.4.4 PRC Environmental Management Site Investigation

PRC Environmental Management, Inc., under contract to USEPA, conducted a Site Investigation at the Site during August 1 through August 12, 1988. Sampling activities included the collection of soil gas, soil and spring samples. The objectives of the investigation were as follows:

(1) to verify contaminant releases through on-Site and off-Site soil and soil gas sampling; and

(2) to verify previous data relative to contaminated springs located at the Haas farm.

Sampling results for soil and soil gas samples are presented on Plans 7 and 10, respectively, and are discussed in Section 4.3. Results from spring samples are discussed in Section 4.6.

2.4.5 NUS Corporation RCRA Facility Investigation

In May 1990, NUS Corporation, under contract to USEPA, conducted a Listing Site Inspection (LSI) at the Site. The objectives of the LSI were as follows:

(1) to identify and characterize waste sources with regard to waste type;

(2) to identify the approximate boundary of each waste source;

(3) to identify target populations; and

(4) to further evaluate contaminant migration pathways.

Sampling activities included the collection of surface water, surface and sub-surface soil, and groundwater samples. Analytical results from these samples are presented on Plans 5, 6 and 9 and are discussed in Sections 4.2, 4.3, 4.5 and 4.6.

2.4.6 ERT Air Investigation

The USEPA conducted an air sampling program at the Site in July 1990. Air samples were analyzed for volatile and semi-volatile organics and pesticides. The only material reported, mesitylene (or 1,3,5-trimethylbenzene), a petroleum compound, was detected below the lowest linear detection limit.

2.4.7 USEPA Additional Field Investigation

In response to requests by private citizens in the vicinity of the Site, additional sampling was conducted by USEPA in August 1990. A total of five samples (one groundwater sample, two sediment samples and two surficial soil samples) were collected. Since the exact locations of these samples are unknown, and since a complete description of the analytical results for the samples is unavailable, these data have not been considered in this report.

2.4.8 USEPA Sampling Investigation

During the period of September 1990 through April 1991, USEPA conducted a sampling investigation at the Site. The objectives of the sampling investigation were as follows:

(1) to determine the nature, extent, environmental fate and transport mechanisms of Site contaminants;

(2) to determine the extent to which contaminants have migrated or are expected to migrate;

(3) to determine whether future contaminant migration may pose a threat to public health, welfare or the environment;

(4) to determine the likelihood of future releases of contaminants that remain on Site;

(5) to determine the extent to which the contaminant source can be adequately identified and characterized;

(6) to determine hydrogeological factors such as soil permeability, depth to saturated zone, proximity to a drinking water aquifer, hydrologic gradients, floodplains and wetlands proximity;

(7) to determine the extent to which natural or man-made barriers prevent the migration of the contaminants, and the adequacy of the barriers; and

(8) to determine routes of exposure.

Available soil sample results for soil samples collected on Site and adjacent to the Site and for concrete samples collected from the existing concrete slab during the USEPA sampling investigation are presented on Plans 2, 3A, 3B, 3C, 3D and 4 and are discussed in Section 4.

3.0 SITE TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

3.1 TOPOGRAPHY

The Site is situated on a north to south trending ridge of Lick Mountain which is located approximately one-half mile to the southeast. The Caldwell County landfill is located immediately to the northeast of the Site, and is situated within a natural valley that has been partially filled by the landfilling activities.

The ridge upon which the Site is situated acts as a drainage divide, with surface runoff draining predominantly to the east and west, with some drainage to the south.

3.2 GEOLOGY

The Site is located within the Blue Ridge physiographic province. The area can be characterized by a core of Precambrian basement rocks, which are unconformably overlain by younger Precambrian metamorphic rocks (gneiss). The Site is underlain by gneissic-acidic bedrock, which has been weathered to form a layer of saprolitic soil.

USEPA reported that the saprolitic soil at the Site exists to an approximate depth of up to ten feet before bedrock is encountered. Subsite soils consist primarily of sandy silts and silty sands, but layers of gravels and sands were also identified. Soil borings (PRC, August 1988) have also

indicated that surficial materials across the Site include compacted course limestone fill material, to depths varying from one to five feet within the facility boundaries. The fill was deepest between CSI's office and the bulking and storage area.

During USEPA's 1990/1991 sampling activities, sub-surface soil samples were reportedly collected on Site at depths of up to approximately 31 feet below grade, thus indicating that the depth to bedrock is in excess of ten feet, contrary to that reported previously by USEPA. Therefore, it can be concluded that the depth to bedrock in the vicinity of the Site has not been adequately defined.

3.3 HYDROGEOLOGY

Available groundwater monitoring data collected in the vicinity of the former Haas property, the Caldwell County landfill, and the Site is limited. As shown on Plan 1, a total of 15 wells comprised of 12 groundwater monitoring wells and three former potable water wells are located on and adjacent to the Site. Five monitoring wells were reportedly installed by Caldwell County and seven monitoring wells were installed by USEPA. The three former potable water wells are comprised of one well located immediately to the northwest of the former incinerator area, one well located to the southeast of the southeast corner of the concrete slab, and the former Haas potable water well.

Available analytical data suggests that, at best, water level measurements have been collected from all 15 wells during the same time frame only once; namely during USEPA's 1990/1991 sampling investigation. On this note, it is assumed that USEPA collected their reported water level measurements from the 15 wells during the time frame of April 15, 1991 to April 17, 1991, concurrent with well sampling activities.

Based on a review of the water level measurements collected from the 15 wells, presumably between April 15, 1991 and April 17, 1991, it appears that groundwater flows both east and west from the Site, and may in fact flow radially. Although, additional water level information would have to be obtained for locations both north and south of the Site in order to adequately confirm that groundwater flows radially, this theory is further substantiated in that it is likely that groundwater flow, in general, follows the topography of the surrounding area. Based on water level measurements collected by USEPA, presumably during the time frame of April 15, 1991 to April April 17, 1991, it appears that the depth to groundwater at the Site ranges from approximately 56 feet to 92 feet. Since the depth to bedrock has not been adequately defined, it is not known whether groundwater is present within the saprolitic soil as well as the underlying fractured bedrock.

Several springs have been identified west of the Site on the former Haas property. If, in fact, groundwater flows radially from the Site, or in a southwesterly direction, it is possible that groundwater beneath the Site discharges at these springs.

4.0 NATURE AND EXTENT OF CONTAMINATION

4.1 OVERVIEW

An assessment of the nature and extent of contamination at the Site has been undertaken based upon analytical data generated from previous environmental sampling events performed at the Site. Specifically, the reports identified in Section 1.0, with the exception of the Interim RCRA Facility Assessment Report, dated October 1987, prepared by A.T. Kearney, Inc., were referenced during data compilation and review. These reports present analytical data for various environmental samples collected on or adjacent to the Site, including surficial soils, sub-surface soils, soil gas, groundwater and surface water. In addition, analytical data for a number of samples collected from several on-Site sumps and a septic tank are presented. As noted in the following sections, available analytical data related to the former CSI industrial wells, the springs located on the former Haas property to west, and the various monitoring wells located on and adjacent to the Site is limited, and accordingly, only a limited assessment of the nature and extent of groundwater contamination in the vicinity of the Site is presented. Conversely, the analytical data for soil samples collected on and adjacent to the Site are relatively comprehensive, although a number of data gaps and data inconsistencies have been identified.

The assessment of the nature and extent of contamination of soil has been based largely on the results of USEPA's sampling activities performed during the time frame of September 1990 through April 1991, and on results of NUS Corporation's sampling activities performed during

May 1990. These data comprise the most current and comprehensive analytical data. In addition, the USEPA soil sampling was performed on a structured grid pattern, and samples were collected at designated depth intervals. Analytical data from the other referenced sources were used, as necessary, to supplement the data from the May 1990 and October/November 1990 sampling activities by NUS Corporation and USEPA, respectively, during the assessment of the nature and extent of contamination at the Site.

The following sections detail the nature and extent of contamination found within or immediately adjacent to the confines of the Site security fence.

4.2 SOURCE AREAS

4.2.1 Overview

The majority of, if not all, source materials that were believed to have contributed to the contamination of the various Site media have already been removed from the Site by the facility operator. Specifically, all tanked and drummed wastes, with the possible exceptions of the former underground fuel tank located at the southern portion of the Site, a washwater holding tank located south of the block building (south of the CSI office area) which reportedly was used to contain washwaters from an employee shower area located within the block building, and a septic tank located between the office area and the incinerator area, have been removed.

Existing containerized materials remaining at the Site include approximately 165 55-gallon drums which purportedly contain soil auger cuttings, well construction/development waters, and used personal protective equipment generated during the installation and sampling of monitoring wells by USEPA and others, and approximately six drums of unknown materials.

4.2.2 Nature and Extent of Contamination

It is currently unknown whether the approximately 171 on-Site drums which purportedly contain soil auger cuttings, well construction/development waters and additional unknown materials have been sampled. If sampled, analytical data are not currently available and accordingly, comment cannot be made as to the nature or extent of contaminants in the drummed materials.

Analytical data for liquids ponded within three of the on-Site sump areas within the concrete slab of the CSI facility were generated from samples collected by NUS Corporation during their May 1990 sampling activities. These samples were analyzed for volatile organic compounds (VOCs), base/neutrals and acid extractable compounds (BNAs) and metals. Although several additional sumps exist on Site, it appears that only three of the sumps, as described herein, were sampled. The location of the samples collected from the sumps are shown on Plan 9.

The sump located within the new tank farm area was reportedly a receptor of spills and floor wash materials from the new tank

farm and the adjacent bulk unloading area. The ash tank sump reportedly received runoff from waters used to extinguish incinerator ash in the ash tank, floor wash waters from the incinerator area of the facility, and liquid wastes from the old tank farm sump. It is assumed that the old tank farm sump was the receptor for spills and floor wash waters from the old tank farm. Reportedly, liquids from the old tank farm sump were pumped to the ash tank sump for transfer to waste storage tanks.

Analytical data indicate that the new tank farm sump and the ash tank sump contain a number of VOCs, at concentrations in the range of 5 J µg/L (where J is a qualifier indicating an estimated value) to 410 µg/L, and 14 µg/L to 130 µg/L, respectively. VOCs which were detected at the highest concentrations in both the new tank farm sump and the ash tank sump were toluene and total xylenes. Specifically, the new tank farm sump contained toluene and total xylenes at concentrations of 410 µg/L and 320 µg/L, respectively. The ash tank sump contained toluene and total xylenes at concentrations of 59 µg/L and 130 µg/L, respectively. Both sumps also contained several BNAs. BNAs which were detected at the highest concentrations in the new tank farm sump and the ash tank sump were "unidentified compounds", at concentrations of 1000 J µg/L and 5000 J µg/L, respectively. The highest identified BNAs in each sump were isophorone and bis(2-ethylhexyl)phthalate at concentrations of 35 µg/Land 200 µg/L, respectively. In addition to VOCs and BNAs, various metals were also detected in both sump samples.

Identifiable VOCs, BNAs, pesticides and PCBs were not detected in the sample collected from the old tank farm sump; however, one

unidentified compound was detected at a concentration of 20 J µg/L. In addition, various metals were also detected.

During USEPA's well sampling activities performed at and adjacent to the Site in April 1991, USEPA reportedly collected a sample from an "aboveground septic holding tank located on-site". It is currently not known definitely which tank USEPA sampled, however, for the purpose of this report, it is assumed that USEPA are referring to the underground washwater holding tank (with two large concrete portals which extend approximately two feet above the ground surface). Results of chemical analysis performed on the sample indicated that the sample contained the presumptive evidence of several BNA's. The BNA compound detected in the highest concentration was octadecanoic acid (presumptive evidence) detected at concentrations of 400 J µg/L. Three VOC's, specifically 1,1,1-trichloroethane, tetrachloroethene, and toluene were detected in the sample at concentrations of 1.3 J µg/L, 0.53 J µg/L, and 20 J µg/L, respectively. A number of metals were also detected in the sample.

No information or analytical data is available on the current contents, if any, of the former underground fuel tank or the septic tank, however, it is believed that the underground fuel tank is empty.

4.3 SOILS

4.3.1 Overview

As discussed in Section 4.1, the primary sources of data used in the assessment of the nature and extent of contamination of the soils at the Site are the results of the USEPA sampling activities performed at the Site during the time frame of September 1990 to April 1991, and the results of sampling activities performed by NUS Corporation during May 1990. The analytical results from the USEPA soil sampling activities are presented on Plans 2, 3A, 3B, 3C, 3D and 4, and the analytical results of the NUS Corporation soil sampling activities are presented on Plans 5 and 6. In addition, the analytical results for soil samples collected by PRC Environmental Management (August 1988) and USEPA (September 1987) are presented on Plans 7 and 10, and Plan 8, respectively; analytical results from these soil (and soil gas) samples were used to supplement the more current USEPA and NUS Corporation data.

To understand the results of USEPA's soil investigation sampling, it is necessary to describe the procedure under which the sampling was performed. Based on a review of the USEPA report entitled "Sampling Investigation Report for the Caldwell Systems Inc. Site, Lenoir, Caldwell County, North Carolina", dated August 1991, it appears that the USEPA soil samples were collected, in general, in accordance with the work plan previously prepared by USEPA entitled "Work Plan For the Sampling Investigation at the Caldwell Site, Lenoir, North Carolina" dated

September 1990. The sampling procedures, as quoted from the USEPA Work Plan, were as follows:

> "The incinerator area and the eastern part of the Haas property will be divided into 50 feet by 50 feet grid areas (see Figure 3.1). The surface soil samples (0 to 12 inches BLS) will be collected from the approximate center area of the grid. Where possible, four additional aliquots of soil will be collected from each grid and composited with the soil sample collected from the center of the area to generate one sample. The four additional sampling locations will be located approximately 25 feet from the center of each area at angles of 45°, 135°, 225° and 315° from north. The sample for purgeable organic compound analysis will be taken from the soil collected from the center of each grid prior to collecting the four additional aliquots of soil. Composite samples will not be collected from grids which lie in buildings and/or are paved. Subsurface soil samples will be grab samples collected from the center of each grid.
>
> Surface soil samples will be collected from each grid and may be composite or grab samples. Subsurface soil samples will be collected from 5 feet to 6 feet BLS from grids 1 through 56, grids 62 through 65, and grid 85. Additional sub-surface soil samples will be collected at 5-foot intervals to a total depth of 31 feet from grids 18, 21, 23, 24, 26, 50 and 85. The ESD drill rig will be used to collect these sub-surface soil samples. The cuttings from these borings will be drummed for proper disposal. The borehole will be grouted to land surface with a bentonite grout.

Additional sub-surface soil samples may be collected from approximately 15 grids on the incinerator site. These samples will be collected from 2 feet to 3 feet BLS."

It is noted that the actual depths from which several soil samples were collected varied slightly from the proposed sample depths, however, the variations are insignificant, and therefore are not specifically addressed either in the following section of text nor on the plans.

The following sections discuss the nature and extent of contamination in the surface and sub-surface soils at the Site.

4.3.2 Base/Neutral and Acid Extractable Organic Compounds

4.3.2.1 General

A detailed review of the USEPA 1990 analytical data indicates that a significant portion of the BNAs detected in the Site soils are qualified with an "N" laboratory qualifier. As defined in the data report, "N" indicates "presumptive evidence of presence of material". Although data qualified as "presumptive evidence" would normally be disregarded and assumed unusable, due to the elevated concentration (up to a maximum estimated concentration of 40,000 µg/kg) associated with the presumptive data, these data have been used in the assessment of the extent of

contamination at the Site. Use of the data qualified with an "N" does not significantly change the areal or vertical extent of contamination at the Site.

A significant portion of the USEPA 1990 data is qualified with a "J" laboratory qualifier, indicating an "estimated value". These data have been assumed to be accurate at the concentration estimated, and have been used in the assessment of the nature and extent of contamination without further qualifications. In addition, unidentified compounds were often detected in the soil samples, at concentrations of several tens of thousands of µg/kg. These unidentified compounds were used in the calculation of total BNA concentrations.

Due to the significant number of different BNAs detected in the soils, this evaluation has been based on total concentration of BNAs, where the overall total concentrations exceeded 1,000 µg/kg. BNAs which were detected in one or more soil samples are listed in Table 4.1.

4.3.2.2 Nature and Extent of BNA Contamination

4.3.2.2.1 Surficial Soils

A review of the USEPA's analytical data from their October/November 1990 sampling activities indicates that BNA contamination in the uppermost one foot of soil at the Site (where the total concentration of BNAs exceeds 1,000 µg/kg) is confined largely to the areas within the main operational area of the Site as defined by the baghouse area,

TABLE 4.1

SUMMARY OF BNAS DETECTED IN SOIL SAMPLES
COLLECTED BY USEPA, OCTOBER/NOVEMBER 1990

(3-and/or4-) Methylphenol
(Diethylmethyl) Phenol
(Dimethylethyl) Methylphenol
(Dimethylethyl) Phenol
(Methylethyl) Methyl Ester
1,2,4-Trichlorobenzene
1-Methylnaphthalene
2-Chloronaphthalene
2-Methylnaphthalene
4-Chloro-3-Methylphenol
Bicyclohexylphenyl (2 isomers)
Bis (2-Ethylhexyl) Phthalate
Bis (Dimethylethyl) Methylphenol
Chlorophenoxypropanol
Chrysene
Cyclohexyldienebisbenzene
Cyclopropazulene
Decahydrodimethyl (Methylethyl) Naphthalene
Decahydrotetramethylmethanoazulene
Di-N-Octylphthalate
Diethylbenzene (2 isomers)
Dihydrodimethylindene
Diisocyanatomethylbenzene
Dimethoxy (propenyl) Phenol
Dimethoxyphenol
Dimethyl (Propenyl) Phenol
Dimethylethylphenol
Dimethylnaphthalene (2 isomers)
Dimethylphenol (not 2,4)
Docosanoic Acid
Eicosene
Ethenylnaphthalene
Ethyldimethylbenzene (2 isomers)
Ethylmethylbenzenesulfonamide
Hexadecanoic Acid
Hydroxyphenylpropanoic Acid
Lupenone
Methyl (Propenyl) Benzene
Methylbenzenesulfonamide
Methylbenzenesulfonamide (2 isomers)
Methylheptadecanoic acid, methyl ester
Methylpentadecanoic acid, methyl ester
Methylpropylbenzene (2 isomers)
Methylpyrrolidinone
Naphthalene
Nonylphenol (2 isomers)
Octadecanal
Octahydromethanoindenobisoxirene
Oxybisbenzene
Petroleum Product
Phenol
Phenoxybiphenyl
Phenylbicyclohexyl
Phenylbixyxlohexyl (3 isomers)
Phenylterphenyl
Phosphoric Acid,
Ethylhexyldiphenyl Ester
Phosphoric Acid, Tris
(methylphenyl) Ester
Phthalic Acid
Phthalic Anhydride
Quaterphenyl
Taraxerol
Terphenyl (2 isomers)
Terphenyl Phenozybiphenyl
(2 isomers)
Tetradecadiene
Tetradecanoic Acid
Tetrahydrodimethyl
(methylethyl) Naphthalene
Tetrahydromethylnaphthalene
Tetramethylbenzene (2 isomers)
Tocopherol
Trimethylphenyldihydroindene

former incinerator area, and the old tank farm area within the confines of the Site security fence, and the areas approximately 100 feet east and west of the Site security fence. Of a total of 30 samples collected by USEPA from this area, identified as the Central Region on Figure 2.2, 19 of the samples contained total BNAs at concentrations exceeding 1,000 µg/kg, in the range of 1,100 µg/kg to 398,320 J µg/kg (where J indicates a laboratory estimated value). Of the 19 samples containing total BNAs at concentrations exceeding 1,000 µg/kg, the most frequently detected compounds were:

Compound	*Frequency of Detection*	*Range of Concentration (µg/kg)*
Bis(2-ethylhexyl)Phthalate	12 samples	970 - 210,000
Phthalic Anhydride	8 samples	100 JN - 2000 JN
Phenol	5 samples	80 J - 400 J

Of the 11 samples where total BNAs were not detected above 1000 µg/kg, four of the samples were collected from a grid line extending across the southern portion of the Central Region of the Site, thereby providing some definition of the southern limit of contamination.

As shown on Plan 2, only three additional areas sampled by USEPA contained total BNAs in excess of 1000 µg/kg in the uppermost one foot of soil. Sample 25-SLA, collected approximately 50 feet south of the old tank farm area contained total BNAs at a concentration of 2,450 J µg/kg. The specific BNAs detected in the sample were consistent with the most prevalent compounds detected in the samples collected from the Central Region of the Site, namely bis(2-ethylhexyl)phthalate at a concentration of

2,200 μg/kg and phenol at a concentration of 250 J μg/kg. BNA contamination at this location may, therefore, be the result of an incidental non-routine release or spill at the Site.

As shown on Plan 2, surficial soil sample 70-SLA, collected at the extreme southwest corner of the sampling grid, approximately 120 feet southwest of the Site, contained total BNAs at a concentration of 33,100 J μg/kg. However, all compounds "identified" were either qualified by the laboratory as "presumptive evidence", or alternatively, were not identified. It is possible, therefore, that contamination associated with this sample location may not be indicative of contamination from the Site, but rather could be the result of cross-contamination from the USEPA's drill rig or USEPA sampling protocols. Similarly, Sample 57A-SL, collected at the extreme northwest corner of sampling grid, approximately 70 feet northwest of the Site, contained total BNAs at a concentration of 21,000 J μg/kg; however, all compounds "identified" were either qualified by the laboratory as "presumptive evidence", "unidentified compound", or, in the case of one compound, the data were unusable due to poor laboratory quality control. Again, it is possible that contamination associated with this sample location may not be indicative of contamination from the Site, and may be attributable to USEPA's sampling activities.

Analytical results from soil samples collected by NUS Corporation during May 1990, at depths of 0.5 feet to 1.0 feet below grade, are presented on Plan 4. The NUS Corporation data indicate total BNA contamination at greater than 1,000 μg/kg in soils at several areas apparently not sampled by USEPA. Specifically, total BNA contamination in the range of

11,800 J µg/kg to 16,036 J µg/kg was detected in all five soil samples collected on or adjacent to the slope to the access road, outside the security fence east of the Site. Total BNAs at concentrations of 2,000 J µg/kg and 12,900 J µg/kg were also detected in soil samples CS-SS-16 and CS-SS-17, respectively, at locations southwest of the former operational area of the CSI facility, west of the limits of the USEPA sampling. In addition, total BNAs were detected at a concentration of 4,000 J µg/kg at one location, identified as sample CS-SS-08, near the extreme northwestern corner of the Site. It should also be noted that total BNAs at a concentration of 4,000 J µg/kg were detected in a background sample collected at a depth of 0.5 feet to 1 foot at a residence located approximately one-half of a mile north of the Site.

The NUS Corporation analytical data, therefore, confirm that BNA contamination is present in surficial soils within the Central Region on Site. They also indicate that BNA contamination exists on the downgradient sloped area east of the Central Region of the Site and at several locations northwest and southwest of the Site.

During September 1987, USEPA collected six soil samples (excluding one background sample) from locations adjacent to the Site, which reportedly would have intercepted spills and/or runoff from the Site. The sample locations and results of chemical analyses are presented on Plan 7. Although the depths at which five of the six soil samples were collected are not known, it is assumed that, with the exception of Sample CS-7 (reportedly collected over a depth of two to six feet), the samples were collected from near the ground surface. BNAs were not detected in any of these five "surficial" samples collected by USEPA during the September 1987 sampling activities.

4.3.2.2.2 Sub-Surface Soils

During USEPA's October/November 1990 sampling activities 15 sub-surface soil samples were collected at a depth of two feet to three feet below grade, at locations immediately adjacent to the new tank farm area, baghouse area, incinerator area, and the old tank farm. In those cases where sub-surface soil sampling locations existed beneath concrete slabs, USEPA cored through the concrete to obtain sub-surface samples. A review of the analytical data from these samples collected at a depth of two feet to three feet below grade indicates that total BNA contamination at concentrations exceeding 1,000 µg/kg was present in five of the 15 samples, at a maximum total BNA concentration of 3,700 µg/kg (sample 34-SLS). This indicates that total BNA contamination exceeding 1,000 µg/kg is present at three areas, specifically, soils adjacent to the baghouse area, and localized soils located to the north of the bulk unloading area in the new tank farm and to the east of the old tank farm area. Bis(2-ethylhexyl)phthalate was the most prevalent BNA compound in these samples; detected in four of the 15 samples at concentrations ranging from 1,000 µg/kg to 3,700 µg/kg. Other BNA compounds detected in the samples were limited to bis(2-ethylhexyl)phthalate, bis(dimethylethyl)methylphenol, hexadecanoic acid, phenol, phenylbicyclohexyl, and one unidentified compound. These BNA compounds were detected only in one sample each per compound; at a maximum concentration of 1,000 J µg/kg (unidentified compound).

A review of USEPA's analytical data from their October/November 1990 soil sampling activities indicates that BNA contamination in sub-surface soils at the Site at a depth interval of five feet to six feet below grade is limited to two localized areas. Sample 49-SLB, collected in the Central Region of the Site approximately 25 feet outside the Site security fence west of the former incinerator area contained total BNAs at a concentration of 117,760 J µg/kg. BNAs detected in this sample which were not qualified as "presumptive evidence" by the laboratory included 1,2,4-trichlorobenzene (370 J µg/kg), 2-chloronaphthalene (2,600 µg/kg), 2-methylnaphthalene (1,100 J µg/kg), bis(2-ethylhexyl)phthalate (6,400 µg/kg), and naphthalene (890 J, µg/kg), totalling 11,360 J µg/kg. BNAs detected as "presumptive evidence" included 13 different compounds, totalling 106,400JN ppb. Although these results do not appear to be consistent with the BNA results for Sample 49-SLA collected at the same location in the uppermost one foot of soil, the elevated concentrations of BNAs in sample 49-SLB do appear to be generally consistent with the elevated concentrations of BNAs (totalling 398,200 J µg/kg) detected in sample 35-SLA, collected to the east, in the uppermost one foot of soil. Although Plan 2 shows the location of the borehole for Sample 35-SLA to be beneath the concrete slab of the facility, it is assumed that the borehole was actually installed approximately 20 feet further to the west just off the concrete slab.

Sample 17-SLB, collected in the Northern Region of the Site, adjacent to the northeastern corner of the new tank farm area, contained total BNAs at a concentration of 2000 µg/kg. Bis(2-ethylhexyl)phthalate, a prevalent compound detected in the surficial soils in the Central Region of the Site, was the only BNA compound detected in this sample. The presence

of BNA contamination at this five foot to six foot depth is difficult to explain, since BNAs (or VOCs, pesticides, or PCBs) were not detected in any of the adjacent surface or sub-surface soil samples. It is, therefore, likely that the detection of BNAs in Sample 17-SLB is attributable to cross-contamination either in the field during sample collection, or in the laboratory during sample analysis.

Analytical results from sub-surface soil samples collected by NUS Corporation during May 1990 at depths of three feet to four feet below grade indicate more widespread BNA contamination at concentrations in excess of 1,000 µg/kg in sub-surface soils in the Central Region of the Site. Specifically, of the six sub-surface soil samples collected within or just west of the security fence in the Central Region of the Site, BNAs (total) were detected in four samples in the range of 5,050 J µg/kg (sample CS-SB-21) to 151,460 J µg/kg (sample CS-SB-22). It should be noted that sample CS-SB-21 was reportedly collected at a depth of three feet to 15 feet below grade; it is assumed that this sample, however, was actually collected at a depth of three feet to five feet below grade.

Of five sub-surface soil samples collected east of the former operational area of the Site (Central Region) by NUS Corporation during May 1990, BNA contamination exceeding 1,000 µg/kg was detected in two samples at a total concentration of 2,855 J µg/kg and 4,000 J µg/kg . Of the two sampling locations southwest of the former operational area of the Site where elevated concentrations of BNAs were detected in the surficial samples, BNAs were detected in sub-surface soils at concentrations in excess of 1,000 µg/kg at only one location, sample CS-SB-16. Specifically,

7,100 J µg/kg total BNAs were detected at a depth of three feet to four feet below grade.

Sub-surface soil samples collected by PRC Environmental Management during August 1988 also contained elevated concentrations of BNAs at all three locations from which samples were collected for BNA analysis. These samples were collected from areas adjacent to the former incinerator area and old tank farm, at depths ranging from two feet to four feet below grade.

As noted in Section 4.3.2.2.1, of the six soil samples collected by USEPA during September 1987, it is believed that only one sample, identified as sample CS-7 on Plan 8, was collected from a sub-surface location. This sample was reportedly collected over a depth of two to six feet and contained total BNAs at 28,470 µg/kg.

As shown on Plan 2, the USEPA 1990 analytical data indicate that BNA contamination in sub-surface soils at the Site at a depth interval of 10 feet to 11 feet below grade is limited to one localized area in the Central Region of the Site, where a total BNA concentration of 1,080J µg/kg was detected. Although Plan 2 shows the location of the borehole for Sample 23-SLC to be beneath the concrete slab of the facility, it is assumed that the borehole was actually installed approximately 20 feet to the east, just off the concrete slab adjacent to the old tank farm.

One of the BNA constituents comprising the BNA total in sample 23-SLC was chlorophenoxypropanol at a concentration of 80 JN µg/kg,

therefore, qualified by the laboratory as "presumptive evidence", and the other constituent was an "unidentified compound", "detected" at a concentration of 1000 J µg/kg. Based on these laboratory "qualifications", the associated relatively low concentrations, and the fact that total BNAs were not detected at concentrations exceeding 1,000 µg/kg in either of the samples collected at the five-foot to six-foot depths interval nor the surficial soil samples at the same location, BNA contamination at the 10-foot to 11-foot depth interval is not considered to be significant.

Total BNAs were not detected at concentrations exceeding 1000 µg/kg at any of the six borehole locations (as identified on Plan 2) where soil samples were collected by USEPA during 1990. The borehole samples were collected at five-foot intervals below the 10 to 11-foot sampling depth. Specifically, total BNAs were not detected at concentrations exceeding 1000 µg/kg at depths of 15 to 16 feet, 20 to 21 feet, 25 to 26 feet and 30 to 31 feet, at borehole locations 18-SL, 21-SL, 23-SL, 24-SL, 26-SL or 85-SL, respectively, as shown.

4.3.3 Volatile Organic Compounds

4.3.3.1 General

A review of USEPA's analytical data from their October/November 1990 soil sampling activities indicates that a total of only four VOCs were detected in one or more samples. VOCs which were detected in one or more samples included methylene chloride, (m-and/or p-) xylene,

o-xylene, and ethylmethylbenzene. Although soil samples collected by NUS Corporation during May 1990 were analyzed for a comprehensive list of VOCs, VOCs were detected in only a small number of the samples.

The following section describes the extent of VOC contamination at the Site.

4.3.3.2 Extent of VOC Contamination

A total of 64 on-Site soil samples were collected from the uppermost one foot of soil by USEPA during October/November 1990. Of these sample locations, only one sample, 7-SL, contained detectable VOCs. As shown on Plan 2, sample location 7-SL is located in the Central Region of the Site, immediately west of the former office area and east of the former incinerator area. Surficial sample 7-SLA contained a total VOC concentration of 41 J µg/kg, and methylene chloride was the sole VOC detected.

Analytical results from surficial soil samples collected on or adjacent to the Site by NUS Corporation during May 1990, at depths of 0.5 feet to 1.0 feet are, in general, consistent with the results of the USEPA 1990 samples, as shown on Plan 4. Of 15 surficial soil samples analyzed, VOCs were detected in only three samples, at total VOC concentrations not exceeding 14 J µg/kg. Specifically, VOCs were detected in samples CS-SS-27, CS-SS-04 and CS-SS-12, at a total concentration of 14 J µg/kg, 2 J µg/kg and 7 J µg/kg, respectively.

VOCs were not detected in any of the five surficial soil samples collected from locations adjacent to the Site during USEPA's September 1987 sampling activities.

With respect to VOC analytical results for sub-surface soil samples collected at the Site by USEPA during their 1990 sampling activities, of a total of 15 sub-surface soil samples collected at a depth of two feet to three feet, detected VOCs were limited to only one VOC compound in one sample. Specifically, (m- and/or p-) xylene was detected at a concentration of 13 J µg/kg in sample 18-SLS located just north of the bulk unloading area of the new tank farm.

Of a total of 42 sub-surface soil samples collected at a depth of five to six feet during USEPA's 1990 sampling activities, VOCs were detected only once, in the sample collected at location 49-SL, located in the Central Region of the Site approximately 25 feet outside the Site security fence west of the former incinerator area. The VOC compounds detected in sample 49-SLB included (m-and/or p-) xylene at a concentration of 5,700 J µg/kg , o-xylene at a concentration of 3,000 J µg/kg , and ethylmethylbenzene qualified as "presumptive evidence" at a concentration of 10,000 JN µg/kg. Consistent with the approach taken for the BNAs, due to the elevated concentration of the ethylmethylbenzene associated with the "N" presumptive evidence laboratory qualifier, this datum has been included in the assessment of the extent of VOC contamination at the Site. Accordingly, the total VOC concentration of this sample has been assumed by CRA to be 18,700 J µg/kg . Although the result does not appear to be consistent with the VOC results for sample 49-SLA collected at the same location in the

uppermost one foot of soil where VOCs were not detected, the level of VOC contamination in sample 49-SLB may be associated with an elevated concentration of BNAs (117,760 J µg/kg) in the same sample.

Analytical results from soil samples collected by NUS Corporation during May 1990 at depths of 3.0 feet to 4.0 feet, indicate that of 17 samples collected on or adjacent to the Site, VOCs were detected in only four samples. Sample CS-SB-22, located beneath the concrete slab near the southern portion of the former incinerator area, contained VOCs at a total concentration of 28,360 J µg/kg. Samples CS-SB-10, CS-SB-17 and CS-SB-12 contained total VOC concentrations of only 2 J µg/kg, 3 J µg/kg and 8 J µg/kg, respectively.

During sub-surface soil sampling activities performed at the Site by PRC Environmental Management during August 1988, soil samples were collected on and adjacent to the Site at depths ranging from 1.0 feet to 6.0 feet. Of 14 samples collected (not including one background sample and two field duplicates), VOCs were detected in nine samples (excluding one sample where laboratory QA/QC indicates that the data were suspect). Five of these samples contained total VOCs at concentrations exceeding 1000 µg/kg. Results for two of these sub-surface samples indicated VOC contamination in the range of 36,100 µg/kg to 95,300 µg/kg outside the Site security fence west of the former incinerator in the vicinity of the USEPA 1990 sub-surface sample where elevated concentration of VOCs were detected. In addition, the three other sub-surface samples indicated VOC contamination at depths ranging from 2.0 feet to 4.0 feet at on-Site locations east and west of the old tank farm.

Prior to collecting soil samples for chemical analysis during the August 1988 sampling activities, PRC collected soil gas samples to identify areas of VOC contamination. The soil samples submitted for chemical analysis, as discussed previously in this section, were, in general, collected from the same locations as soil gas samples to correlate analytical results between the two media. Soil gas samples were collected over two investigative sampling phases and were analyzed on Site using an organic vapor analyzer in gas chromatograph mode. The majority of the second phase of soil gas samples, collected from suspected spill areas or areas identified during the first phase of soil gas sampling as exhibiting elevated concentration of VOCs, were analyzed at an off-Site laboratory. Only the laboratory soil gas data are currently available.

In assessing the soil gas data, it should be noted that the majority of the soil gas samples were reportedly collected at depths of four to five feet; however, it is also reported that at some sample locations, a second soil gas sample was collected from depths of seven to ten feet. Based on the available data, it is not known which particular samples were collected from which of the two sampling depths. Further, due to the relatively high air volumes that were purged from the gas sampling probes prior to sampling (reportedly 30 to 60 liters), the representative depths at which the soil gas samples were collected cannot be accurately determined. Finally, since it is difficult to quantitatively correlate soil gas results with soil media results, only a qualitative assessment of the soil gas data is presented herein.

In general, there is poor correlation between the soil gas data and the soil media data. Specifically, although the soil gas data indicate that the highest concentrations of VOCs exist within the Central Region of the Site, at several locations where soil gas results indicated elevated concentration of VOCs, the soil media samples either did not contain detectable concentrations of VOCs, or alternatively, contained VOCs at only low concentrations. In addition, the most frequently detected VOCs and the VOCs detected in the highest concentration in the soil gas samples included 1,1,1-trichloroethane, 1,1-dichloroethane, and 1,2-dichloroethane, whereas the most frequently detected and highest concentration VOCs in the soil media samples collected at the same locations were typically acetone, ethylbenzene, toluene and xylenes.

In summary, for the above reasons, the data from the August 1988 soil gas samples collected by PRC Environmental Management has largely been disregarded by CRA in the assessment of the nature and extent of contamination at the Site.

VOCs were not detected at any of the six borehole locations, as identified on Plan 2, where soil samples were collected by USEPA during their 1990 sampling activities, at five-foot intervals below the five to six foot sampling depth.

In the one sub-surface soil sample collected by USEPA during their September 1987 activities, the only VOCs detected were two xylene isomers, totalling 4,200 μg/kg.

4.3.4 Metals

In general, a considerable number of metals have been detected in most surficial and sub-surface soil samples collected to date. Analytical data for metals analyses performed on surficial and sub-surface soil samples are presented on Plans 3A, 3B, 3C, 3D, 5, 7 and 8.

The concentration of metals detected in surficial soil samples were generally consisted with typical background concentrations, with the exception of arsenic, chromium, cobalt, lead, strontium, titanium, vanadium and yttrium.

The concentrations of metals detected in sub-surface soil samples were generally consistent with typical background concentrations, with the exception of arsenic, copper, lead, nickel and zinc.

4.3.5 Pesticides

Of a total of 64 soil samples collected from the uppermost one foot of soil during USEPA's October/November 1990 sampling activities at the Site, pesticides were detected in only two samples. The pesticide parameter list for which samples were analyzed is not known.

Alpha-chlordane/2, gamma-chlordane/2, and trans-nonachlor/2 were detected in sample 6-SLA at concentrations of

85 µg/kg, 160 µg/kg and 96 µg/kg, respectively. As shown on Plan 2, sample 6-SLA is located in the Central Region of the Site, immediately west of the former office area and east of the former incinerator area. At sample location 50-SL, located approximately 25 feet outside the Site security fence west of the former incinerator area, DDE was detected at a concentration of 44 µg/kg.

During USEPA's 1990 sampling activities, pesticides were detected at only one sub-surface soil sample location. Specifically, 4,4'-DDD was detected in sample 18-SLB, at a depth of five feet to six feet, at a concentration of 80 µg/kg.

Of a total of 16 sub-surface soil samples collected on or adjacent to the Site by NUS Corporation during May 1990, pesticides were detected in only one sample. Specifically, sample CS-SB-10, collected at a depth of 3.0 feet to 4.0 feet from a location approximately 15 feet outside the Site security fence west of the old tank farm, contained gamma-BHC (Lindane) at a concentration of 29 µg/kg.

4.3.6 PCBs

PCB analyses performed on a total of 64 soil samples collected from the uppermost one foot of soil at the Site during USEPA's 1990 sampling activities detected PCBs in only four samples. Only PCB Arochlors 1248 and 1254 were detected. Samples collected at location 34-SL, 35-SL, and 36-SL contained total PCB concentrations in excess of 1000 µg/kg, specifically, 1,800 µg/kg, 4,800 µg/kg and 1,400 µg/kg, respectively. Samples

34-SLA and 36-SLA were collected immediately to the north and south of the western portion of the former incinerator area, respectively, and as noted earlier, it is assumed that sample 35-SLA was collected immediately to the west of the former incinerator area. In addition to these samples, PCB Arochlor 1248 was detected at a concentration of 560 µg/kg in sample 21-SLA, assumed to have been collected immediately to the east of the former incinerator area.

Of a total of 15 surficial soil samples collected on or adjacent to the Site by NUS Corporation during May 1990, PCBs (Arochlor 1248) were detected in only one sample. Specifically, sample CS-SS-27, collected at a depth of 0.5 feet to 1.0 feet just east of the former incinerator area, contained PCBs at a concentration of 48,000 µg/kg .

PCBs were not detected in any of the 15 sub-surface soil samples collected at a depth of two feet to three feet during USEPA's 1990 sampling activities. Of 42 sub-surface soil samples collected at a depth of five feet to six feet during USEPA's sampling activities, PCBs were detected (Arochlor 1248) only at sample location 49-SL, at a concentration of 620 J µg/kg. At the additional lower sub-surface soil sampling depths, PCBs were detected only at sample location 21-SL, at a depth of 10 to 11 feet, at a concentration of 120 µg/kg (Arochlor 1248).

Of a total of 16 sub-surface soil samples collected on or adjacent to the Site by NUS Corporation during May 1990, PCBs (Arochlor 1248) were detected in only one sample. Sample CS-SB-20, collected at a depth of 3.0 feet to 4.0 feet just east of the former incinerator area,

contained PCBs at a concentration of 620 µg/kg. As noted above, the surficial soil sample at this location, sample CS-SS-27, contained PCBs at a concentration of 48,000 µg/kg.

In summary, PCBs were detected infrequently in Site soils, located outside the limits of the concrete slabs with only one sample exceeding the 10,000 µg/kg cleanup criterion adapted by USEPA in conjunction with the TSCA Spill Policy. One soil sample collected beneath the concrete slab near the bulk waste roll-off area also contained PCBs at concentrations exceeding the 10,000 µg/kg cleanup criterion, as discussed in Section 4.4.3.6.

4.3.7 Dioxins/Furans

During USEPA's 1990 sampling activities, soil samples were collected from the uppermost one foot of soil at 13 locations on or adjacent to the Site and analyzed for dioxins and furans. The locations of the on-Site soil samples analyzed for dioxins/furans are shown on Plan 2.

Dioxin and/or furan isomers were detected at low concentrations in all 13 of the samples. Toxicity equivalent values (TEQs) for the samples which relate actual dioxin and/or furan isomer concentration to the most toxic dioxin isomer (the 2,3,7,8-tetrachlorodibenzo-p-dioxin isomer) ranged from 0.43 J ng/kg to 38 ng/kg.

During NUS Corporation May 1990 sampling activities, a total of eight surficial soil samples were collected at a depth of 0.5 feet to 1.0 feet and analyzed for dioxins and furans. Dioxin and/or furan isomer were detected at low concentrations in all eight samples. TEQs for the samples ranged from 0.26 J ng/kg to 13.0 J ng/kg. In addition, one sub-surface soil sample, reportedly collected at a depth of 3.0 feet to 15.0 feet below grade, contained a TEQ value of 3.2 J ng/kg.

Therefore, in summary, based on a cleanup criterion of 20 μg/kg 2,3,7,8-TCDD, applied by USEPA to residential sites at the Times Beach Missouri Superfund site, dioxin and furan concentrations at the CSI Site are not of concern.

4.4 CONCRETE AND SUB-CONCRETE SOILS

4.4.1 Overview

During December 1990, USEPA collected nine concrete core samples from eight locations within the concrete slab underlying the baghouse area, incinerator area, and the old tank farm area. The concrete core sample locations are shown on Plan 4. One 3-aliquot core sample was collected from each of seven of the core locations, and two composite core samples were collected from an eighth location (CC-05/CC-05A) where a second concrete layer was encountered.

At each concrete core sample location, sub-concrete soil samples were collected from the soil underlying the concrete core.

The results of TCLP analyses performed on the concrete samples are discussed in the following sections. Summary tables presenting the analytical data for the concrete core and sub-concrete soil samples are presented in Appendix B.

4.4.2 Concrete Core Samples

4.4.2.1 General

Of the nine concrete core samples collected, identified organic compounds were detected only in cores CC-05, CC-05A, CC-06 and CC-07. Unidentified compounds (presumably organic compounds) were also detected in four of the nine concrete core samples, at concentrations ranging from 10 J µg/kg to 30 J µg/kg. No organic compounds were detected in core samples CC-02, CC-03 and CC-04.

4.4.2.2 Base/Neutral and Acid Extractable Compounds

BNA contamination in concrete core samples CC-05 and CC-06 was limited only to (3- and/or 4-) methylphenol, at concentrations of 57 J µg/kg and 300 J µg/kg, respectively.

BNA contamination in concrete core samples CC-05A and CC-07 was limited to (3- and/or 4-) methylphenol and 2-methylphenol. Sample CC-05A contained (3- and/or 4-) methylphenol and 2-methylphenol at concentrations of 64 J µg/kg and 9 J µg/kg, respectively. Sample CC-07 contained (3- and/or 4-) methylphenol and 2-methylphenol at concentrations of 140 J µg/kg and 64 J µg/kg, respectively.

4.4.2.3 Volatile Organic Compounds

VOC compounds were detected only in concrete core sample CC-07. Specifically, tetrachloroethene, toluene and styrene were detected at concentrations of 6 µg/kg, 130 J µg/kg and 5 J µg/kg, respectively.

4.4.2.4 Metals

Both Barium and Silver were detected in all concrete core samples except sample CC-03 at concentrations ranging from 250 J µg/kg to 720 J µg/kg for barium and 15 J µg/kg to 42 µg/kg for silver. Sample CC-03 contained barium at a concentration of 150 J µg/kg, but did not contain a detectable concentration of silver. Chromium, selenium and lead were detected in only one sample each, at concentrations of 41 µg/kg, 5 J µg/kg and 230 µg/kg, respectively. Arsenic was detected in three samples at concentrations ranging from 9 µg/kg to 12 µg/kg.

4.4.2.5 Pesticides

Pesticides were not detected in any of the concrete core samples.

4.4.2.6 PCBs

The concrete core samples were not analyzed for PCBs.

4.4.2.7 Dioxins/Furans

No dioxin or furan isomers were detected in any of the concrete core samples.

4.4.3 Sub-Concrete Soil Samples

4.4.3.1 General

During USEPA's concrete coring activities, water was used as a cooling agent for the core bit. Reportedly, all of the eight sub-concrete soil samples were wet when collected, indicating possible cross-contamination of the soil samples from the overlying concrete and cooling water. Although the sub-concrete soil data therefore is suspect due to potential

cross-contamination, the data nonetheless is discussed in the following sections.

4.4.3.2 Base/Neutral and Acid Extractable Compounds

Although at least one BNA compound was detected in each of the eight sub-concrete soil samples collected by USEPA, the maximum total BNA concentration in any of the sub-concrete soil samples was 399.9 J µg/kg, of which 300 J µg/kg was attributable to an unidentified compound. The most prevalent BNA compound detected was bis(2-ethylhexyl)phthalate, detected in all eight soil samples at concentrations ranging from 0.60 µg/kg to 34 µg/kg.

Other BNA compounds detected in more than one of the eight sub-concrete soil samples included chrysene (detected in three samples), Di-N-Octylphthalate (detected in two samples), phenol (detected in four samples) and terphenyl (detected in two samples). Moreover, unidentified compounds were detected in five of the samples. Of the identified BNA compounds, bis(2-ethylhexyl)phthalate was detected in the highest concentration. Specifically, bis(2-ethylhexyl)phthalate was detected in sample SLU-03 at a concentration of 34.0 µg/kg.

4.4.3.3 Volatile Organic Compounds

VOCs were not detected in four of the eight sub-concrete soil samples; specifically samples SLU-01, SLU-02, SLU-04 and SLU-06.

Of the remaining four sub-concrete samples where VOCs were detected, sample SLU-07 exhibited a total VOC concentration of 2,229 J µg/kg, and sample SLU-03, SLU-05 and SLU-08 exhibited total VOC concentration of 0.013 J µg/kg, 0.005 J µg/kg and 0.366 µg/kg, respectively. 1,1,1-trichloroethane was the most prevalent VOC detected, and was detected in each of these four samples. The VOC detected in the highest concentration was toluene, detected only in sample SLU-07, at a concentration of 2,200 µg/kg. Other VOCs detected included tetrachloroethene, detected in sample SLU-08 at a concentration of 0.31 µg/kg, and trichloroethene, detected in sample SLU-03 and SLU-05 at concentrations of 0.006 J µg/kg and 0.002 J µg/kg, respectively.

4.4.3.4 Metals

Various metals were detected in all sub-concrete soil samples, with the exception of sample SLU-05 which was not analyzed for metals. All metals detected were present at concentrations typical of background soils, with the exception of cobalt, which was present in all samples, at concentrations in the range 21 mg/kg to 550 mg/kg.

4.4.3.5 Pesticides

Pesticides were detected only in one of the eight sub-concrete soil samples collected. Specifically, aldrin was detected in sample SLU-06 at a concentration of 0.01 µg/kg.

4.4.3.6 PCBs

PCBs were detected in two of the eight sub-concrete soil samples collected. Specifically, sample SLU-03 contained PCB Arochlor 1242 at a concentration of 9.0 mg/kg and sample SLU-05 contained a PCB Arochlor 1242 at a concentration of 24.0 mg/kg.

4.5 GROUNDWATER - WELLS LOCATED ADJACENT TO SITE

4.5.1 Overview

A total of 15 wells, comprised of 12 groundwater monitoring wells and three former potable water wells, are located in the vicinity of the Site, the former Haas property, and the Caldwell County landfill. Five monitoring wells were reportedly installed by Caldwell County and seven monitoring wells were installed by USEPA. The three former potable water wells are comprised of one well (DW-1) located immediately to the northwest of the former incinerator area, one well (DW-2) located to the southeast of the southeast corner of the concrete slab, and the former Haas

potable water well (Haas). As shown on Plan 1, during the various investigations performed at the Site these wells have been identified with different identification numbers. For consistency and ease of reference, all wells will be referred to by the identification number used by USEPA during their April 1991 well sampling activities (consistent with Reference Source 4 on Plan 1).

To facilitate the discussion of the nature and extent of groundwater contamination, the wells have been divided into four groups based on their location relative to the operational area of the Site. This is an appropriate way to discuss the nature and extent of groundwater contamination, since as discussed in Section 3.3, it is likely that groundwater flows radially from the Site.

Area 1 includes wells located directly on Site within the confines of the Site security fence; specifically Area 1 includes wells MW-A, DW-1 and DW-2. Area 2 includes wells located west of the Site, namely wells MW-C, Haas, EPA-MW3 and EPA-MW4. Area 3 includes wells located immediately east of the Site, namely wells MW-B, EPA-MW1 and EPA-MW2. Area 4 includes wells located south, east and north of the Caldwell County landfill, namely wells MW-2, MW-3, EPA-MW5, EPA-MW6 and EPA-MW7. Since the Caldwell County landfill is located between the Site and these wells, it is likely that available analytical data for the wells in Area 4 may be more representative of groundwater conditions associated with the landfill. Accordingly, the wells included in Area 4 have not been considered in the evaluation of the nature extent of groundwater contamination in the vicinity of the Site.

The assessment of the nature and extent of groundwater contamination at the Site is based primarily on the results of USEPA well sampling activities performed during the time frame of April 15, 1991 to April 17, 1991, since this was the most comprehensive well sampling program performed on and adjacent to the Site to date. Specifically, USEPA's 1991 well sampling program included the collection of groundwater samples from the seven new monitoring wells installed by USEPA in 1991, the five monitoring wells previously installed by Caldwell County, and the three former potable water wells. Limited analytical results from samples collected from wells MW-A, MW-C, DW-1, DW-2, EPA-MW1, and the Haas well, by NUS Corporation during their May 1990 monitoring event, and results from a sample collected from the Haas well in September 1987, have also been used in the assessment of the nature and extent of groundwater contamination in the vicinity of the Site, to supplement the USEPA 1991 data.

All available physical and analytical information for the wells is summarized in Appendix E.

4.5.2 Nature and Extent of Contamination

4.5.2.1 Base/Neutrals and Acid Extractables

During USEPA's 1991 well sampling program, BNA compounds were detected in all three wells within Area 1. Only one BNA

compound, namely caprolactam, was detected in more than one of the Area 1 samples, however this compound was listed as presumptive evidence.

Caprolactam (presumptive evidence) was also the "identified" BNA compound detected in the highest concentration. Specifically, caprolactam was detected at a concentration of 60 JN µg/L in well DW-1.

During USEPA's 1991 well sampling program, BNA compounds were detected in all four of the Area 2 wells, although, with the exception of unidentified compounds, all BNAs were detected only as presumptive evidence. Petroleum product was the most prevalent BNA compound detected (as presumptive evidence) in the Area 2 wells, and was detected only in two of the four wells. With the exception of 300 J µg/L of one unidentified compound detected in well EPA-MW3, the compound detected in the highest concentration was caprolactam, detected in the Haas well at a concentration of 30 JN µg/L.

During USEPA's 1991 well sampling program, BNA compounds were detected only in two of the three wells in Area 3. BNAs were not detected in well EPA-MW1. Of the ten BNAs detected in wells EPA-MW2 and MW-B, none were detected in more than one well. BNAs detected in the highest concentrations were both detected as presumptive evidence, in well MWB. Specifically (dimethylethyl)methylphenol and caprolactam were detected in well MW-B at concentrations of 5,000 JN µg/L and 40,000 JN µg/L, respectively.

BNAs were detected in three of the six wells in the vicinity of the Site during studies at the Site prior to USEPA's 1991 well sampling activities. Listed BNAs were not detected in samples collected from the former Haas residential well by USEPA in September 1987, or NUS Corporation in May 1990. BNAs were not detected in well DW-1, the former CSI industrial well located west of the former incinerator area, nor were BNAs detected in monitoring well MW-A located at the northern portion of the Site. Only qualified BNAs were detected in the other CSI industrial well, well DW-2 located near the southeastern portion of the Site. Qualified BNAs detected in well DW-2 included acid ethylester, qualified as "presumptive evidence", at a concentration of 6 JN µg/L, and butyldiene bis (dimethylethyl) phenol, qualified as "presumptive evidence", at a concentration of 60 JN µg/L. In addition, 14 unidentified compounds were detected at a total concentration of 700 J µg/L. Monitoring wells EPA-MW1 and MW-C were the only wells in the vicinity of the Site where BNAs not qualified as presumptive evidence or unidentified compounds were detected. Specifically, bis(2-chloroethyl)ether was detected in monitoring well EPA-MW1 at a concentration of 33 µg/L, as well as other unidentified compounds at a total concentration of 2,000 J µg/L. At monitoring well MW-C, bis(2-ethylhexyl)phthalate was detected at a concentration of 70 µg/L, as well as four unidentified compounds at a total concentration of 300 J µg/L.

4.5.2.2 Volatile Organic Compounds

During USEPA's 1991 well sampling program, VOCs were detected in two of the three wells in Area 1. VOCs were not detected in well MW-A. VOCs detected in both wells DW-1 and DW-2 included 1,1-dichloroethene, 1,1-dichloroethane, 1,2-dichloroethane and 1,1,1-trichloroethane. Cis-1,2-dichloroethene was detected in well DW-2 at a concentration of 28 J µg/L, and tetrachloroethene was detected in well DW-1 at a concentration of 4.2 J µg/L. The VOC detected in the highest concentration in Area 1 was 1,2-dichloroethane, detected in well DW-2 at a concentration or 1,400 µg/L.

During USEPA's 1991 well sampling program, VOCs were detected in three of the four wells in Area 2. VOCs were not detected in well MW-C. VOCs detected in one or more of wells EPA-MW3, EPA-MW4 and the Haas well included 1,1-dichloroethene, 1,1-dichloroethane, 1,2-dichloroethane, 1,1,1-trichloroethane, tetrachloroethene and toluene. The most prevalent VOC was 1,1-dichloroethene, detected in all wells in Area 2 except MW-C, as concentrations ranging from 2.7 J µg/L to 24 J µg/L. The VOC detected in the highest concentration was 1,1,1-trichloroethane, detected in well EPA-MW3 at a concentration of 180 µg/L.

VOCs were detected in all three wells in Area 3 during USEPA's 1991 well sampling program. The most prevalent VOCs detected were 1,1-dichloroethene, detected in all three wells at concentrations ranging from 1.9 J µg/L to 140 J µg/L, and 1,1,1-trichloroethane detected in all three wells at concentration ranging from 14 µg/L to 610 µg/L. The VOC detected

in the highest concentration was 1,2-dichloroethane, detected in well MW-B at a concentration of 4,800 µg/L.

During the September 1987 sampling investigation performed by USEPA, VOCs were detected in low concentrations in the former Haas residential well. The VOCs detected were 1,1-dichloroethene, 1,1-dichloroethane and 1,2-dichloroethane, at concentrations of 1 J µg/L, 1.5 J µg/L and 1.5 J µg/L, respectively. However, when the well was sampled in May 1990 by NUS Corporation, VOCs were not detected. In addition, VOCs were not detected in monitoring wells MW-C or MW-A.

Several VOCs were detected, however, (during the May 1990 sampling by NUS Corporation) in monitoring well EPA-MW1 and in both former CSI industrial wells. Specifically, in wells EPA-MW1, DW-2 and DW-1, 1,2-dichloroethane was detected at concentrations of 6,300 µg/L, 4,400 µg/L, and 13 µg/L, respectively, and 1,1,1-trichloroethane was detected at concentrations of 1,000 µg/L, 720 µg/L and 81 µg/L, respectively. The next highest VOC contaminant detected in any of the wells was toluene, detected in well CL-MW-01 at a concentration of 1,200 µg/L.

4.5.2.3 Pesticides

During USEPA's 1991 well sampling activities, pesticides were detected only in well DW-1 in Area 1. Specifically, 4,4'-DDT and 4,4'-DDE were detected in well DW-1 at concentrations of 0.088 J µg/L and 0.081 J µg/L, respectively.

Pesticides were not detected in samples collected from any of the wells within Areas 2 and 3 during USEPA's 1991 well sampling activities.

Pesticides were not detected in samples collected from wells MW-A, MW-C, EPA-MW1, DW-1, DW-2 or the Haas well, during previous sampling activities performed prior to USEPA's 1991 sampling activities.

4.5.2.4 PCBs

PCBs were not detected in any of the wells in Areas 1, 2 and 3 during USEPA's 1991 sampling activities, nor have they been detected in any of the wells during previous sampling investigations at the Site.

4.5.2.5 Metals

Overall, the extent to which metals have impacted the groundwater on and adjacent to the Site is marginal. Only very limited contamination is present at levels above the Federal Maximum Contaminant Level (MCL)[1].

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1 In the context of this discussion, MCL may refer to promulgated, proposed, secondary or proposed secondary MCLs.

During NUS Corporation's May 1990 groundwater investigation wells DW-1, DW-2, MW-A, EPA-MW1, MW-C and the Haas well were sampled. Aluminum, iron and manganese were the only metals detected in these wells at levels exceeding the respective MCL. Monitoring wells DW-2, MW-A and MW-C contained all three of these metals at levels exceeding the MCL, while the Haas property well contained an elevated level of aluminum, and EPA-MW1 contained elevated levels of aluminum and iron.

USEPA subsequently installed an additional seven wells during their groundwater investigation completed in the spring of 1991.

All three monitoring wells located in Area 1 contained both manganese and iron at levels exceeding their respective MCLs. Moreover, monitoring wells MW-A and DW-2 contained aluminum at levels exceeding the MCL. However, in addition to manganese and iron, the Area 3 wells also contained aluminum at concentrations exceeding the MCL.

As in Area 1, the monitoring wells located in Area 2 were found to contain manganese and iron at levels exceeding their respective MCL. However, only monitoring wells MW-C, EPA-MW3 and EPA-MW4 contained aluminum at levels exceeding the MCL for aluminum.

Consistent with Areas 1 and 2, the monitoring wells in Area 3 contained manganese and iron at levels exceeding the MCL. However, in addition to manganese and iron, the Area 3 wells also contained aluminum at concentrations exceeding the MCL. In addition, monitoring

well EPA-MW1 was found to contain elevated concentrations of chromium, nickel and lead at levels exceeding the MCL.

4.5.2.6 Dioxins/Furans

Groundwater samples collected by USEPA during their 1991 well sampling activities were not analyzed for dioxins and furans.

During May 1990, groundwater samples were collected from the three on-Site wells identified as wells DW-1, DW-2 and MW-A and analyzed for dioxins and furans. Dioxins and furans were not detected in any of the samples.

4.5.2.7 pH and Specific Conductivity

During USEPA's 1991 well sampling activities, pH measurements for samples collected from wells in Area 1 were relatively consistent, ranging from 5.6 to 5.9. Specific conductivity measurements from these samples ranged from 60 µmhos/cm to 350 µmhos/cm.

During USEPA's 1991 well sampling activities pH measurements for samples collected from the wells in Area 2 ranged from 5.7 to 6.5. Specific conductivity measurements from these samples ranged from 20 µmhos/cm to 220 µmhos/cm.

During USEPA's 1991 well sampling activities, pH measurements for samples collected from the wells in Area 3 ranged from 5.7 to 6.5. Specific conductivity measurements from these samples ranged from 180 µmhos/cm to 280 µmhos/cm.

In May 1990 and August 1990, NUS Corporation collected measurements of pH and specific conductivity from wells MW-A, MW-C, EPA-MW1, DW-1, DW-2 and the Haas well. The results are presented in Table 4.2. With the exception of well EPA-MW1, located adjacent to the access road to the southeast of the Site, pH and conductivity measurements were collected only once. pH and conductivity measurements were, in general, typical of background groundwater concentrations. The pH of the wells ranged from 5.1 to 6.9, and the conductivity ranged from 93.3 to 393 µmhos/cm. The pH of well EPA-MW1 was measured as 12 during May 1990, and was measured as 10.14 in August 1990. Conductivity was measured in well EPA-MW1 during August 1990 only, and was determined to be 210 µmhos/cm.

4.6 SURFICIAL SPRINGS - FORMER HAAS PROPERTY

Three surficial springs are located between the Site and the former Haas residence, as shown on Plan 1. The springs identified by USEPA during the September 1987 sampling event as CS-4 and CS-5 (westernmost springs) were sampled by USEPA during September 1987, by PRC Environmental Management during August 1988, and by NUS Corporation during May 1990. The spring identified as CS-3 (easternmost

spring) has been sampled only twice, once by USEPA during September 1987 and once by PRC Environmental Management during August 1988.

During the USEPA 1990/1991 sampling investigation, a spring, reportedly located northeast of the Haas driveway was sampled. However, the sample identification number has not been correlated with this sample location and therefore it is not known which data corresponds to this spring sample. Therefore, this data is not included in this discussion.

A review of the available analytical data from all sampling events indicates that BNAs have not been detected in any of the springs. As a result of the September 1987 and August 1988 sampling events, only one organic contaminant was detected in spring CS-3. Specifically, toluene was detected at a concentration of 1.2 J µg/L during the September 1987 sampling event.

With respect to the two western springs, several VOCs were detected in both wells during the September 1987 and August 1988 sampling events. However, during the May 1990 sampling event, VOCs were not detected in spring CS-4, and only two VOCs were detected in well CS-5 (5 µg/L 1,2-dichloroethene and 4 J µg/L 1,1,1-trichloroethane). Of all three sampling events the VOCs most frequently detected and at the highest concentrations were 1,1,1-trichloroethane, detected in the range of 4 µg/L to 46 µg/L , and 1,2-dichloroethane, detected in the range of 5 µg/L to 15 µg/L.

As shown in Appendix E, a number of metals have been detected in all springs during each sampling event. The only metal which

has been detected at concentrations exceeding its MCL is iron. Specifically, iron has been detected in the westernmost spring at concentrations of 1,920 μg/L and 1,400 μg/L, and in the easternmost spring at a concentration of 677 μg/L.

5.0 PROBLEM DEFINITION

5.1 OVERVIEW

On the basis of currently available information, surface facility closure operations and related supplemental data requirements can be segregated into four major areas. These four areas will lend focus to supplemental data gathering activities and to any resulting remedial efforts. Each of the major areas is discussed in more detail in the following:

Source Areas

The primary uncontained potential sources of contamination that still remain at the CSI facility include on-Site sumps, a septic tank and presumably an associated tile field, and a washwater holding tank. During past investigations and Site visits, standing liquids have been observed in at least three of the sumps. Liquids contained by the septic tank, if contaminated, may be a potential source of contamination of subsurface soils and underlying groundwater.

Soils

Previous investigations indicate that some limited and localized PCB contamination exists in surficial soils. At least one exposed soil location and one soil location existing beneath the concrete slab, exhibit PCBs in soils at concentrations that exceed the 10 ppm cleanup criterion promulgated under 40 CFR 761.125 of TSCA.

Drums

Approximately 165 drums of soil auger cuttings, monitoring well construction/development waters, used personal protective equipment and approximately six drums of miscellaneous unknown materials, are currently staged at various locations on Site. The majority of the drummed materials are staged on the concrete slab of the old tank farm area. The contents of these drums need to be adequately characterized to determine the appropriate disposal mode of these materials.

Structures

On-Site structures, with the exception of the concrete slabs, have not been characterized. Investigative monitoring of the concrete slabs indicates the presence of limited organic and inorganic contamination. However, TCLP extract concentrations reported by USEPA in their August 1991 report indicate that the slabs are not a TCLP-characteristic RCRA hazardous waste pursuant to 40 CFR 261.24. Further investigation is necessary to determine the appropriate disposition of structural components.

6.0 SAMPLING AND ANALYSIS PLAN

6.1 OVERVIEW

The Sampling and Analysis Plan (SAP) presents the scope of work for additional sample collection at the CSI Site. This section also defines the objectives for supplemental monitoring and details field quality control measures. To minimize the exposure of Site personnel to potentially contaminated material, all field activities will be performed following the guidelines outlined in the Site-specific Health and Safety Plan (see Appendix F). It was noted from the review of the existing Site data base, as generated from a compilation of available data, that a number of data gaps or additional data requirements existed. Specifically, additional analytical data are required to fulfill the following objectives:

1) to further define the areal and vertical extent of PCB contamination at the Site;

2) to further define the vertical extent of organic contaminants other than PCBs, namely selected volatiles and semivolatiles beneath existing concrete slabs;

3) to further define the scope of potential remedial work to be performed; and

4) to further characterize waste streams for disposal purposes.

All procedures/protocols stated herein were developed in accordance with the latest USEPA Region IV guidance document entitled, "Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual, February 1, 1991" (SOP). However, specific details pertaining to the proposed supplemental data acquisition and sampling and analyses activities are presented in the following sections.

6.2 PCB CONTAMINATION DELINEATION

As detailed in Section 4.3.6, PCBs have been detected in only eight samples of exposed soils (soils outside the areal limits of the concrete slab) collected from varying depths at six locations on or adjacent to the Site. Of these eight samples, seven samples exhibited PCBs in the range of 0.120 ppm to 4.8 ppm, and one sample exhibited PCBs at a concentration of 48 ppm.

As identified in Sections 4.3.6 and 4.4.3.6, for soils located beneath the concrete plant slabs, PCBs have been detected at concentrations exceeding the 10 ppm TSCA spill cleanup policy criterion at only one location. Specifically, PCBs were detected at a concentration of 24 ppm in the sub-concrete soil sample SLU-05 located near the eastern portion of the incinerator area, as shown on Plan 4. Based on the above-noted results for PCB analyses, it appears that PCB contamination in soils at the Site at concentrations exceeding 10 ppm may be localized to the eastern portion of the incinerator area adjacent to the bulk waste roll-off storage area.

Consistent with the intent of the PCB spill cleanup policy requirements, it will be necessary to define the areal and vertical limits of PCB contamination on Site exceeding 10 ppm. This delineation will entail the collection and analysis of soil samples at the locations where previous investigations detected PCBs in soils at a concentration exceeding 10 ppm. All samples collected will be submitted to an approved laboratory and analyzed for PCBs, using a maximum PCB detection limit of 1 ppm.

Although PCBs detected in samples collected at USEPA's sample location 21-SL , as shown on Plan 2, were at concentrations below 1 ppm, since this location is in close proximity to NUS Corporation's sample location CS-SS-27, as shown on Plan 5, where PCBs were detected at a concentration of 48 ppm, additional surficial soil samples will be collected from locations perimetering sample location 21-SL to further confirm that this area does not contain PCB contamination exceeding 10 ppm. Additional soil samples will also be collected from beneath the concrete slab in the vicinity of the incinerator area, perimetering USEPA's sub-concrete soil sample location SLU-05.

Based on a comprehensive review of the PCB analytical data for these additional samples and the PCB data from previous sampling investigations performed at the Site as presented herein, the areal and vertical limits for soil excavation to remove PCB contamination will be determined as follows.

6.2.1 Areal Delineation

In order to determine the areal limits of PCB contamination exceeding 10 ppm in soils located outside the areal limits of the concrete slab, surficial soil samples will be collected from areas surrounding sampling locations CS-SS-27 and 21-SL. Initially, surficial soil samples will be collected at a 20-foot distance north and east of soil sampling location CS-SS-27 (see Plan 5), where PCBs were detected at a concentration of 48 ppm. Subsequently, surficial soil samples will be collected at 10-foot distances from CS-SS-27 in line with the two samples initially collected at a 20-foot distance. Surficial soil samples will be collected on the north, south, and east sides of soil sampling location 21-SL located just east of the concrete slab, (see Plan 2) at a 10-foot distance.

In addition, in order to determine the areal limits of PCB contamination exceeding 10 ppm in soils beneath the concrete slab, soil samples will be collected from beneath the concrete slab at distances of 10 feet outward on all four sides of sub-concrete soil sample SLU-05.

6.2.2 Vertical Delineation

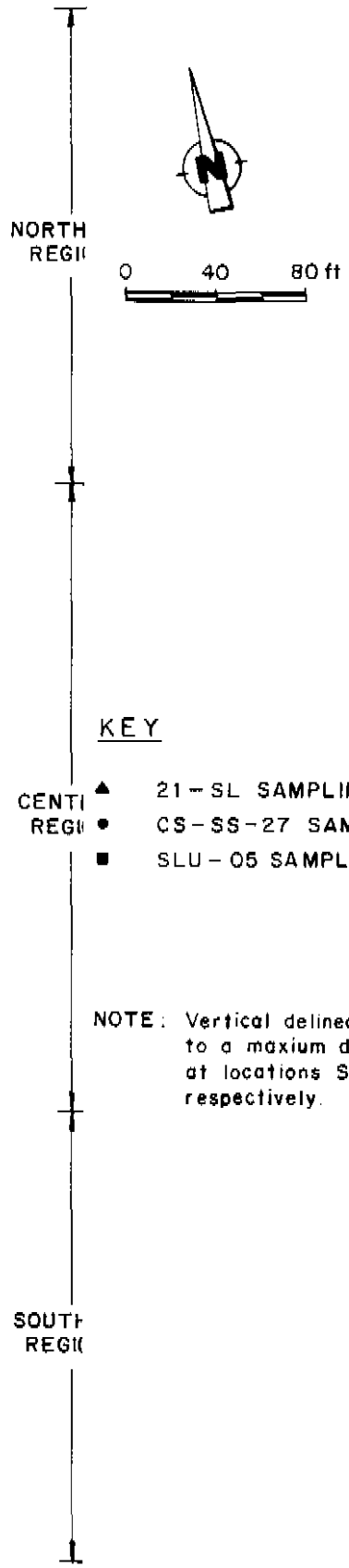
In order to determine the presence of PCBs in subsurface soils at sampling location CS-SS-27, samples will be collected in 1-foot increments to a total depth of three feet below ground surface. Samples for each 1-foot increment will be submitted to the laboratory, with the zero to 1-foot sample being submitted for immediate analysis, while subsequent

samples will be extracted, and the extract archived by the laboratory for potential future analysis.

In order to determine the vertical depth of PCBs in soils located beneath the concrete slab at sub-concrete soil sample location SLU-05, soil samples will be collected at 1-foot increments to a total depth of two feet below the concrete slab, at a location immediately adjacent to location SLU-05. Samples for each 1-foot increment will be submitted to the laboratory, with the zero to 1-foot sample being submitted for immediate analysis, and the extract for the 1-foot to 2-foot sample archived by the laboratory for potential future analysis. In addition, the concrete immediately adjacent to location SLU-05 will be sampled in accordance with the procedures identified in Section 6.3.1, and the concrete sample submitted for PCB analysis.

The presence of total PCBs within the uppermost soil samples at both locations CS-SS-27 and SLU-05, at a concentration greater than 10 mg/kg will trigger the analysis of the underlying samples. This process will continue until the underlying samples contain total PCBs below 10 mg/kg or until the last sample is analyzed.

Figure 6.1 shows the locations of PCB sample collection points for areal and vertical delineation.



KEY

- ▲ 21 – SL SAMPLING LOCATION
- ● CS – SS – 27 SAMPLING LOCATION
- ■ SLU – 05 SAMPLING LOCATION

NOTE: Vertical delineation samples will be collected to a maxium depth of two feet and three feet at locations SLU-05 and CS – SS – 27, respectively.

figure 6.1

SOURCE: Base adapted from Final Sampling Invest dated November 16,

DELINEATION SAMPLE LOCATIONS
CALDWELL SYSTEMS, INC. SITE
Lenoir, North Carolina

CRA

4154 (3) – FEB. 25, 92 – REV. 0 – (C)

6.2.3 Sample Collection Methods

During areal contaminant delineation at locations outside the limits of the concrete slab, a hand trowel or hand auger will be hand-driven into the soil a total depth of six inches. In areas designated for vertical contaminant delineation outside the limits of the concrete slab, a split-spoon sampler will be advanced into the soil to its full 24-inch depth. Samples representative of the 2-foot to 3-foot depth interval will be collected by advancing the split-spoon through the void space remaining after removal of the first set of samples. Between each sampling station, all sampling equipment will be decontaminated in accordance with the protocol specified in Section 6.10.1.

During areal and vertical contaminant delineation at locations beneath the concrete slab, portions of the overlying concrete will be removed using a portable four-inch diameter core drill. Following removal of the overlying concrete core, a split-spoon will be advanced into the underlying soil to its full 24-inch depth. Between each coring location, the core drill bit and all sampling equipment will be decontaminated in accordance with the protocol specified in Section 6.10.1.

A record of all soil sampling will be maintained by the Site geologist.

The protocol for soil sample collection, and associated tasks, is detailed in the following.

1. The sampling tool, core drill bit, and all other instruments used in extracting the soil samples for chemical analysis will be precleaned using the prescribed rinse sequence (Section 6.10.1). A new pair of disposable latex gloves will be used for each sample handled.

2. Each soil sample for chemical analysis will be obtained and prepared in the following manner:

   a) using a clean cutting tool (stainless-steel knife), the soil sample will be extracted from the sampling tool; and

   b) the extracted soil sample will be sectioned and placed into a clean sample container.

3. A sample for matrix spike analyses will be collected.

4. Sampling equipment blank samples (rinsate blank) will be collected during this phase of soil sampling at a frequency of one in twenty laboratory samples collected. The rinsate blank sample will consist of deionized or distilled water poured over the sampling equipment after it has been cleaned using the prescribed decontamination sequence (Section 6.10.1). This will provide a quality assurance check on the effectiveness of field decontamination procedures.

5. Soil samples will be labeled noting the sampling location, depth, date, time and sampler's initials. A separate hard-cover field book will be maintained to document all soil samples and sampling events.

6. Samples will be placed in ice or cooler packs in laboratory-supplied coolers immediately following collection and labeling.

6.3 CHARACTERIZATION OF CONCRETE PLANT SLABS

Limited information is currently available on the nature and extent of contamination of the existing concrete plant slabs located on Site. Specifically, these concrete slabs include the slabs underlying the former incinerator area and the old tank farm, the new tank farm, the baghouse area, and a small concrete pad located north of the new tank farm which purportedly was the base of a nitrogen storage area. Investigative data generated by USEPA, based on TCLP extraction and analysis of nine core samples, indicate the presence of limited organic and inorganic contamination. It is noted, however, that for detected compounds regulated under 40 CFR 261.24, none of the TCLP extract levels reported by USEPA exceeded corresponding regulatory threshold levels promulgated under this rule.

In order to further assess the nature and extent of contamination of the concrete slabs and to provide waste characterization information, approximately 14 concrete core samples will be collected from areas of the concrete slabs which are most likely to be contaminated. The actual sample locations will be determined in the field at the time of sampling; however, it is currently anticipated that concrete core samples will be collected from the following locations:

1) one sample will be collected from a location adjacent to the sumps in the new tank farm area, incinerator area, old tank farm area, baghouse area and the bulk waste roll-off area;

2) four samples will be collected from the former incinerator area and baghouse area, focussing especially on the previous USEPA sample location identified as CC-05; and

3) three samples will be collected from the old tank farm area, focussing on the previous USEPA locations CC-07 and CC-06.

The samples collected from the location adjacent to the sumps will be composited to form one composite sample; the samples collected from the former incinerator area and baghouse area will be composited to form a second composite sample and the three samples collected from the Old Tank Farm Area will be combined to form a third composite sample. Each composite sample will be analyzed to determine if the concrete plant slabs are RCRA-characteristic hazardous waste in accordance with 40 CFR 261, and additional PCB analyses will be performed on samples to determine if the concrete slabs are regulated under TSCA.

6.3.1 Sample Collection Methods

Concrete core samples will be collected using a water cooled core barrel. The cooling waters will be contained, collected and stored

in on-Site drums, pending disposal. Upon coring through the concrete medium, the core sample will be removed from the core barrel and crushed as discrete samples using a precleaned hammer and steel plate, and placed in the appropriate precleaned sample containers.

The core barrel will be cleaned between core samples using the cleaning sequence detailed in Section 6.10.1.

6.4 SUB-CONCRETE SOIL SAMPLING

In order to establish the vertical extent of contamination in soils underlying the concrete slabs, each void space remaining after removal of a concrete core (discussed in Section 6.3) will be screened with an HNu. Should the HNu screening indicate the potential presence of organics in underlying soils, as determined by HNu readings above background (meter readings of greater than one unit), then soil boreholes will be completed to a total depth of four feet at each location with HNu readings above background. Soil samples will be collected from each borehole, at 2-foot depth intervals extending to a total depth of four feet. Soil samples will be collected from split-spoons at the designated sample depths. Samples collected from each depth interval will be analyzed for Target Compound List (TCL) VOCs, BNAs and PCBs. The resulting data from these samples will then be used to determine if the sampled soils pose an unacceptable risk.

6.4.1 Sample Collection Methods

During borehole sampling, the split-spoon sampler will be advanced into the soil the full depth (24 inches). Between each sampling station, all sampling equipment will be cleaned in accordance with the protocol specified in Section 6.10.1.

A record of all soil sampling will be maintained by the Site geologist.

The protocol for soil sample collection, and associated tasks, is detailed in the following.

1. The sampling tool and all other instruments used in extracting the soil samples for chemical analysis will be precleaned in accordance with the protocol specified in Section 6.10.1. A new pair of disposable latex gloves will be used for each sample handled.

2. Each soil sample for chemical analysis will be obtained and prepared in the following manner:

   a) using a clean cutting tool (stainless-steel knife), the soil sample will be extracted from the sampling tool; and

   b) the extracted soil sample will be sectioned and placed into a clean steel bowl in which each sample will be individually homogenized. Upon homogenizing each sample, the soils will

be placed into the appropriate sample bottle. All sample bottles will be prepared by the contract laboratory. The sample bottles will be delivered to the Site in sealed containers.

3. A sample for matrix spike analyses will be collected at a minimum frequency of one in 20 laboratory samples collected.

4. Sampling equipment blank samples (rinsate blank) will be collected during the soil sampling at a frequency of one in ten laboratory samples collected. The rinsate blank sample will consist of deionized water poured over the sampling equipment after it has been cleaned using the protocol specified in Section 6.10.1. This will provide a quality assurance check on the effectiveness of field decontamination procedures.

5. Soil samples will be labeled noting the sampling location, depth, date, time and sampler's initials. A separate hard-cover field book will be maintained to document all soil samples and sampling events.

6. Samples will be placed in ice or cooler packs in laboratory-supplied coolers immediately following collection and labeling.

6.5 CHARACTERIZATION OF ADDITIONAL SITE STRUCTURES

No quantitative information is currently available on the nature and extent of contamination of various Site structures. These

structures include support beams, metal roofs, aluminum building coverings, the baghouse unit, and the office trailers and block building which reportedly comprised the former CSI office area.

In order to determine the appropriate disposal mode of these structures, an attempt will be made to collect approximately six bulk samples from residual materials which may be deposited on interior and exterior surfaces of the old tank farm/incinerator area, baghouse area, new tank farm area and the former CSI office area. If possible, approximately three bulk samples will be collected from the old tank farm/incinerator area and the baghouse area and will be composited to form one composite sample. Additional samples will be collected from the new tank farm area and the former CSI office area and will be composited to form a second composite sample. Each composite sample will be analyzed to determine if the deposited materials are RCRA-characteristic hazardous waste in accordance with 40 CFR 261, and additional PCB analyses will be performed on the samples to determine if the materials are regulated under TSCA. In addition, several bulk insulation samples will be collected from several pipes within or adjacent to the baghouse unit which appear to be insulated with a fibrous material which may be asbestos.

6.5.1 Sample Collection Methods

6.5.1.1 Bulk Sampling

1. A new pair of disposable gloves will be used for each bulk sample collected;

2. Samples will be collected by obtaining an available portion of residual material and placing the sample directly into a plastic bag (i.e. ziplock™ bags); and

3. All samples will be properly labeled and submitted to the contract laboratory for compositing and analysis.

6.5.1.2 Asbestos Sampling

1. A new pair of disposable gloves will be used for each sample collected;

2. Bulk samples will be collected from areas where insulation appears to be composed of fibrous material which may be asbestos;

3. Grab samples will be placed directly into a plastic bag; and

4. All samples will be labeled and submitted to the contract laboratory for asbestos analysis.

6.6 CHARACTERIZATION OF SUMP LIQUIDS

As detailed in Section 4.2.2, previous sampling investigations at the Site confirmed that at least two of the sumps situated within the concrete plant slabs on Site contained liquids contaminated with VOCs and BNAs. On October 16, 1991, ponded liquids, presumably rainwater, were observed in a number of the sumps.

During the supplemental sampling activities to be performed at the Site, one composite sample representative of the liquids contained in all of the sumps will be collected and analyzed to determine the appropriate disposal mode for this material. Although the final characterization requirements will be dependent upon the requirements of the selected disposal/treatment facility, likely, this will include VOCs, selected inorganic parameters and possibly TCL BNAs.

6.6.1 Sample Collection Methods

As discussed previously, one composite sample representative of all sumps will be collected and analyzed. Sump samples will be collected in accordance with the following:

1. New disposable latex gloves will be used when collecting each sump sample. Additional new glove changes will be made as conditions warrant;

2. Samples will be collected by the grab sample method directly into the appropriate precleaned sample container specific for the selected parameters;

3. All sample containers will be supplied by the contract laboratory and arrive on Site in sealed containers; and

4. All discrete sump samples collected will be submitted to the contract laboratory for compositing and subsequent analysis.

6.7 CHARACTERIZATION OF DRUMMED WASTE MATERIALS

If characterization data are not available from the USEPA, or do not provide a sufficient characterization of the drummed waste materials, the drummed materials will be addressed as follows.

All drummed soil auger cuttings will be bulked and homogenized in a roll-off box and one composite sample, composited from soil from at least four locations within the roll-off box, will be collected from the bulked soils. This composite sample will be analyzed to determine if the bulked soils are RCRA-characteristic hazardous waste in accordance with 40 CFR 261. In addition, the composite sample will also be analyzed for PCBs to determine if the bulked soils are regulated under TSCA.

Similarly, all drummed well construction/development waters will be consolidated and homogenized in a tank, and one sample will be collected from the tank. This sample will be analyzed to determine the appropriate disposal mode for the consolidated waters. Although the final characterization requirements will be dependent on the requirements of the selected disposal/treatment facility, likely this will include VOCs, selected inorganic parameters and possibly TCL BNAs.

The approximately six drums of unknown materials will be sampled individually, and analyzed initially for basic compatibility parameters. Following receipt of results from the compatibility analyses, the need to perform additional chemical analysis on the drums will be assessed.

Drums containing miscellaneous used personal protective equipment (PPE) will not be sampled, but will be disposed of as RCRA-characteristic hazardous waste.

6.7.1 Sample Collection Methods

Bulked Soils

The bulked soils will be sampled directly from the roll-off box as follows:

1. New disposable latex gloves will be used when collecting the bulked soil sample;

2. A stainless steel sampling spoon, precleaned in accordance with the procedures described in Section 6.10.1 will be used to retrieve bulked soil from at least four locations within the roll-off box;
3. The soil sample material will be transferred directly to the sample jar; and
4. The sample container will be capped tightly.

Bulked Well Construction/Development Waters

The bulked well construction/development waters will be sampled directly from the bulking tank as follows:

1. New disposable latex gloves will be used when collecting the bulked water sample;
2. The sample will be collected by the grab sample method directly into the sample container; and
3. The sample container will be capped tightly.

Unknown Drummed Materials

One sample will be collected from each drum. Sampling procedures are outlined as follows:

The following procedures will be followed during sampling of drummed liquids:

1. New disposable latex gloves will be used when collecting each drum sample;

2. Insert an acrylic or glass sampling thief almost to the bottom of the drum or until a solid layer is encountered. If more than one phase of material is identified in liquid or solid drums, each phase will be sampled for compatibility testing and waste characterization as appropriate. If no phasing is apparent, then the sample will be collected from at least 12 inches down from the top of the drummed waste;

3. Allow the liquid in the drum to reach its natural level in the tube;

4. Cap the top of the sampling thief with a double gloved thumb or stopper, ensuring liquids do not come into contact with the sampler's thumb or stopper;

5. Carefully remove the capped thief from the drum and insert the uncapped end in the sample container;

6. Release the thumb or stopper and allow the sampling thief to drain completely and fill the sample container. Repeat the above steps until sufficient volume has been collected for analysis;

7. Remove sampling thief from the sample container;

8. Cap the sample container tightly;

9. Replace the drum bung or cover.

The following procedures will be followed during sampling of drummed solids:

1. New disposable latex gloves will be used when collecting each drum sample;

2. Sample collection will be accomplished using a stainless steel or disposable spatula and spoon. All stainless steel sampling equipment will be cleaned between subsequent drums using the cleaning protocols described in Section 6.10.1. Disposable spatulas will be discarded after each use;

3. A representative sample will be collected from a depth at least four inches from the top of the drum contents' upper surface;

4. Transfer the sample material to the sample container and cap the sample container tightly; and

5. Replace the drum cover.

All samples will be placed in ice or cooler packs in a laboratory-supplied cooler immediately following collection and labeling.

6.8 SEPTIC TANK FIELD CHARACTERIZATION

Out of concern that hazardous materials may have been deposited in on-Site wastewater drains intended for sanitary wastes (washrooms, laboratory sink drains, etc.), the septic field associated with the site septic tank will be located and sampled. Once the exact location of the tile field is determined, three samples will be collected at approximate equal distances from each other. The final locations; however, will be selected following approval by USEPA or their on-Site contractor. Soil samples will be collected from each borehole, at two-foot depth intervals extending to a total depth of four feet. Soil samples will be collected from split-spoons at the designated sample depths. Samples collected from each depth interval will be analyzed for Target Compound List (TCL) VOCs, BNAs and PCBs.

Sample collection methods and equipment decontamination protocols will be consistent with those set out in Sections 6.4.1 and 6.10.1, respectively.

6.9 CHARACTERIZATION OF TANKED MATERIALS

A total of five tanks (excluding the ash tank) exist on Site which may contain waste or non-waste materials. These tanks include the stainless steel former waste storage tank, underground fuel tank, emergency fire water tank, septic tank and an underground washwater holding tank.

During the supplemental sampling activities to be performed at the Site, each of the above-noted tanks will be investigated further to determine whether they contain materials. Each tank containing material will be sampled, and the samples will be analyzed to determine the appropriate disposal mode for this material. Although the final characterization requirements will be dependent on the requirements of the selected disposal/treatment facility, likely, this will include VOCs, selected inorganic parameters and possibly TCL BNAs.

6.9.1 Sample Collection Methods

The tanks will be sampled according to the following procedures. The accessibility of each tank will determine how the tank will be sampled. In general, the following procedures will be followed to obtain a representative sample from each tank:

1) An oil phase interchange probe and/or tape covered with "water-cut" sensing material will be lowered into the tank to determine the number of phases and depth of each phase of liquid contained in the tank;

2) A Bacon bomb, Kemmerer, or similar sampling device will be lowered on a nylon rope into the tank (alternatively, the sample container may be lowered directly into the tank);

3) A discrete sample will be collected from each phase interval of contained liquid, wherever possible, and placed in a pre-labeled sample container. If the phase interval is not adequate in volume to sample, a composite sample of the various phases will be collected and homogenized;

4) The sample container will be securely capped and transported to the laboratory;

5) Sampling logs will be kept to document the tank the sample was collected from, the depth interval sampled, the approximate volume of contained liquid, the approximate volume of contained sludge material, any stratification of material, physical description of each sample, sampler's name, and date and time of collection;

6) The sampling device will be decontaminated prior to each use according to procedures specified in Section 6.10.1;

7) Nylon rope will be changed between each tank sampled; and

8) Disposable gloves will be changed between each sample.

6.10 EQUIPMENT CLEANING AND SAMPLE HANDLING

6.10.1 Equipment Cleaning

Sample equipment cleaning will be accomplished by flushing and wiping the components to remove all visible foreign matter followed by:

i) cleaning with water and laboratory detergents, using a brush if necessary, to remove particulate matter and surface films;

ii) rinsing thoroughly with water;

iii) rinsing thoroughly with deionized water;

iv) rinsing twice with isopropanol;

v) allowing the equipment to air dry as long as possible; and

vi) wrapping with aluminum foil (if the equipment is going to be stored or transported) to prevent contamination.

Fluids used for cleaning will not be recycled. All wash water, rinse water and decontamination fluids will be stored in a container on Site pending final disposal. All consolidated decontamination fluids will be disposed of in accordance with Federal, State and local regulations.

Following the final rinse, equipment will be visually inspected to verify that they are free of soil particulates and other solid material which may contribute to possible cross-contamination.

6.10.2 Sample Labeling and Control

A unique sample numbering system will be used to identify each collected sample. This system will provide a tracking number to allow retrieval and cross-referencing of sample information. A listing of the sample identification numbers with written descriptions of sample location, type, and date will be maintained by Conestoga-Rovers & Associates' (CRA's) field personnel.

All sample labels will be firmly affixed to the sample containers they identify. Quality Assurance (QA) samples will also be numbered with a unique location number.

One member of the sampling team will be responsible for recording the sampling activities for each day and will record in the log book the following with respect to each sample:

i) unique sample identification number;
ii) sampling location identification;
iii) date/time of sample collection;
iv) sampling data and other relevant remarks; and
v) name of sampler.

6.10.3 Chain-Of-Custody Records

Chain-of-custody records will be used to track all samples from time of sampling to the arrival of samples at the laboratory. One copy of the chain-of-custody record will be retained by the shipper. Three copies of the chain of custody record will accompany the sample shipment to the laboratory and will be signed by the receiving laboratory's sample custodian. One copy of the chain-of-custody record will be retained by the laboratory. Two completed copies will be returned to CRA by the laboratory. One of the two completed copies will be returned to CRA upon receipt of the samples by the laboratory. The remaining completed copy will accompany the data deliverable package.

6.10.4 Custody Seals and Sample Packaging

All samples will be sealed individually with custody seal tape. Samples will be cushioned within the shipment cooler using "bubble wrap" and/or vermiculite. Sample shipments will be cooled by placing zip-lock™ bags of ice and/or cooler packs around the sample containers. Any remaining space will be filled with vermiculite or an equivalent packing material.

The chain-of-custody record, as described by Section 6.9.3, for each sample shipment will be packaged in a waterproof envelope and sent

with the samples to the assigned laboratory. A separate chain-of-custody form will be developed for the contents of each cooler and will be included within each respective cooler.

Two custody seals containing the sampler's initials will be placed over the lid on the front of each shipping cooler to provide evidence that the samples have not been tampered with while en route to the laboratory. Clear tape will be placed over the seals to ensure that they are not accidentally broken during shipment. The condition of the seal and the general condition of the cooler will be noted by the laboratory sample custodian on the chain-of-custody record upon receipt and inspection of the cooler.

6.10.5 Sample Analysis

The methods of analysis and of laboratory control procedures will be in accordance with the Quality Assurance Project Plan presented as Appendix G.

7.0 POTENTIAL REMEDIAL ALTERNATIVES

7.1 OVERVIEW

This section discusses on a media by media basis, the potential disposition of the various physical structures, soils and equipment on Site, based on currently available information. The final disposition and selection of remedial alternatives, however, will be based on these data as supplemented by data generated from implementation of the Sampling and Analysis Plan.

7.2 CONTAMINATED SOILS

7.2.1 Overview

Contaminants in exposed soils located on and adjacent to the Site are at sufficiently low concentrations such that no remediation of soils is required for the protection of workers potentially exposed to surface and sub-surface soils. However, in order to ensure compliance with the lower cleanup level promulgated by TSCA, pursuant to 40 CFR 761.125, areas on Site where PCBs exist in soils at concentrations exceeding 10 ppm must be "decontaminated to 10 ppm PCBs by weight provided that soil is excavated to a minimum depth of 10 inches". Also in accordance with 40 CFR 761.125, the excavated areas must be backfilled with soil containing less than 1 ppm PCBs, and the area restored.

Available analytical data indicate that only two areas on Site, soil sample location CS-SS-27 as shown on Plan 5 (collected at a depth of 0.5 feet to 1.0 feet) and soil sample location SLU-05 beneath the concrete slab, exhibit PCBs in soils at concentrations exceeding the 10 ppm cleanup criteria. As noted in Section 6, the extent of PCB contamination in the soil at these locations will be delineated through the collection of additional samples for PCB analyses, during the supplemental soil sampling program to be performed at the Site. The disposition of soils containing PCBs at concentrations in excess of 10 ppm is discussed in the following section.

Soils underlying the concrete slab exhibit the presence of organic contamination. Should further investigation indicate that this contamination poses an unacceptable risk, then further soils removal will be addressed on the basis of the final risk assessment.

7.2.2 Removal of PCB-Contaminated Soils

Soils confirmed to be contaminated with PCBs at concentrations exceeding 10 ppm will be excavated to a minimum depth of 10 inches, temporarily stockpiled as necessary, and loaded into licensed waste-hauling vehicles. All PCB-contaminated soils removed will be disposed off Site at a TSCA-permitted chemical waste landfill.

Following excavation, confirmatory soil samples will be collected from the base of the excavation, and the samples will be submitted to an approved laboratory for PCB analyses. If the analytical results from the

confirmatory samples indicate that the remaining soil at the base of the excavation does not contain PCBs at concentrations exceeding 10 ppm, the excavation will be backfilled to grade with clean imported fill material. If the analytical results indicate that the soil at the base of the excavation contains PCBs at concentrations exceeding 10 ppm, a minimum of six inches of additional soil will be excavated from the base of the excavation, and additional confirmatory soil samples will be collected. This procedure will be repeated until the remaining soil at the base of the excavation does not contain PCBs at concentrations exceeding 10 ppm.

Following backfilling of the excavated areas, the areas will be seeded with grass in order to minimize erosion.

7.2.3 Removal of Sub-Slab Soils

As discussed in Section 6.4, the disposition and handling, if any, of non-TSCA regulated soils underlying the concrete slab will be decided upon review of the supplemental data, in conjunction with the historical data, to determine if these materials pose an unacceptable risk.

7.3 CONCRETE SUMPS AND PLANT SLABS

Based on the fact that the intended purpose of the various sumps located within the concrete plant slabs was to collect spills, and following a review of available analytical data for liquids ponded within the

sumps, it is believed that the base and concrete sidewalls of the on-Site sumps, are likely contaminated to the extent that they would be considered a RCRA-characteristic hazardous waste. Available analytical data from a sample collected from the sump located in the old farm (NUS, 1980) indicates that the liquid contained in the sump is contaminated only with metals, and did not contain detectable concentrations of VOCs, BNAs, pesticides or PCBs.

Following removal of the liquids contained within the sumps, all sumps (including the Old Tank Farm Sump) within the concrete plant slabs will be excavated, removed from Site, and disposed at a RCRA-permitted chemical waste landfill.

Following removal of the sumps, the base of the excavation will be sampled for chemical analyses to determine whether the sumps did leak hazardous constituents into the underlying soils. Following review of the analytical results, if necessary the base of the excavation will be excavated further to remove residual soil contamination in accordance with criteria applicable to the cleanup of the other Site soils, and subsequently, the excavation will be backfilled with clean imported fill.

Limited information is currently available on the nature and extent of contamination of the existing concrete plant slabs underlying the former incineration area and the old tank farm, the new tank farm, the baghouse area, and a small concrete pad located north of the new tank farm which purportedly was the base of a nitrogen storage area.

In order to determine the disposition of the concrete slabs, samples of the concrete will be collected and analyzed to determine if the materials are RCRA-characteristic hazardous waste in accordance with 40 CFR 261, and additional PCB analysis will be performed on the samples to determine if the concrete is regulated under TSCA.

If determined to be regulated under either RCRA or TSCA, the concrete slabs will be excavated, removed from Site, and disposed at either a RCRA or TSCA permitted chemical waste landfill. If it is determined that the concrete slabs are not regulated under either RCRA or TSCA, the slabs will be left in place.

If the concrete sample collected immediately adjacent to the location of USEPA's sub-concrete sample SLU-05 is determined to contain PCBs at concentrations exceeding 10 ppm, portions of the concrete slab removed in order to excavate sub-concrete soils in the vicinity of sample SLU-05 which are contaminated with PCBs at concentrations exceeding 10 ppm, will be disposed at a TSCA-permitted chemical waste landfill along with the PCB-contaminated soils.

7.4 ABOVE-GROUND STRUCTURES

Limited information is currently available on the nature and extent of contamination of the various above-ground structures located on Site, including support beams, metal roofs, aluminium building coverings, and the baghouse unit. However, the State of North Carolina has

previously accepted CSI's certification of closure[1] of various structures and/or equipment and on this basis, these structures will be disposed of as uncontaminated debris at an appropriate facility.

In order to determine the disposition of potentially contaminated structures, an attempt will be made to collect bulk samples of any residual materials which may be deposited on them. Specifically, an attempt will be made to collect samples of residual materials which may have been deposited by incineration emissions, on beams, rafters and pipes within the former incineration area and baghouse area. These samples will be analyzed to determine if the deposited materials are RCRA-characteristic hazardous waste in accordance with 40 CFR 261, and additional PCB analyses will be performed on the samples to determine if the materials are regulated under TSCA.

If the deposited materials are determined to be regulated under either RCRA or TSCA, the structure will be dismantled, removed from Site, and disposed at either a RCRA or TSCA permitted chemical waste landfill, as appropriate. In the event that analyses indicate that these structures are not regulated under either RCRA or TSCA, above-ground structures may be dismantled and disposed as non-hazardous material at a local sanitary landfill, assuming approval from a local disposal facility.

In the event that a lack of deposited material available for sample collection makes it impossible or impractical to collect bulk samples

[1] Personal Communication, Jerome H. Rhodes, Chief Hazardous Waste Section to Charles B. Foushee, Jr. dated October 30, 1989.

from the above-ground structures, the disposition of these structures will be consistent with the disposition of the concrete plant slabs. If, however, it is determined that the concrete slabs are not regulated under either RCRA or TSCA, the above-ground structures, including support beams, metal roofs, aluminium building covers, and the baghouse unit, will be demolished and disposed as non-hazardous material at a local sanitary landfill, assuming approval from a local disposal facility.

7.5 SUMP LIQUIDS

At least seven sumps are known to exist within the concrete slab on Site. As noted previously, these sumps reportedly received spills and floor wash materials. Previous sampling activities at the Site confirmed the presence of VOCs and BNAs in at least two of the sumps. On June 14, 1991 and again on October 16, 1991, ponded liquids, presumably rainwater, were observed in a number of the sumps.

One composite sample representative of the liquids contained in all of the sumps will be collected and analyzed to determine if the liquids are RCRA-characteristic hazardous waste in accordance with 40 CFR 261, and additional PCB analysis will be performed as the sample to determine if the liquids are regulated under TSCA. Subsequently, the contents of the sumps will be removed and disposed at an appropriate TSD facility.

7.6 EXISTING DRUMMED WASTE MATERIALS

Approximately 165 drums located on Site purportedly contain soil auger cuttings, well construction/development waters, and used personal protective equipment, generated by USEPA and others during the installation and sampling of monitoring wells. The majority of these drums are currently staged on the concrete slab in the old tank farm area, however a number of these drums are staged at various miscellaneous locations on Site.

USEPA drum logs and results of chemical analyses performed on samples collected from these drums by USEPA, if any, will be requested from USEPA. If available, the information will be reviewed to determine the chemical characteristics of the drummed materials, and a determination will be made as to the potential disposition of these drums and the necessity for additional sampling and analyses of the drum contents. If this information is not available, drummed soils and waters will be bulked separately and one sample will be collected from each of the bulked soils and waters. Chemical analyses will be performed on each sample as detailed in Section 6, to determine if the materials are RCRA-characteristic hazardous waste in accordance with 40 CFR 261, or if the materials are regulated under TSCA, as appropriate.

Following receipt of chemical analyses performed on the samples of the bulked soils and waters, if determined to be regulated under RCRA or TSCA, the bulked soils and waters will be disposed of at a RCRA or TSCA permitted TSD facility, as appropriate. Bulked soils determined to be non-regulated, will be removed from Site and disposed at a sanitary landfill.

Bulked liquids determined to be non-regulated will be disposed at a publicly owned treatment works (POTW) or industrial wastewater treatment facility.

The approximately six drums of unknown materials will be sampled and the samples analyzed individually. Pending the results of chemical analysis performed on these drum samples, the drums will be removed from Site and disposed in accordance with all applicable Federal and State regulations.

7.7 INTACT TANKS

7.7.1 Overview

As of October 16, 1991, the following above-ground and underground storage tanks remained on Site. These tanks included the following:

- ash tank;
- two miscellaneous empty tanks;
- stainless steel tank;
- underground fuel tank;
- emergency fire water tank;
- septic tank located west of the Site office area; and
- washwater holding tank.

The above-noted tanks will be addressed as detailed in the following sections.

7.7.2 Tank Disposition

7.7.2.1 Ash Tank and Two Miscellaneous Empty Tanks

The former ash tank, located near the northern portion of the former incinerator area was used to contain ash from the incinerator unit. This rectangular open-sided tank currently does not contain ash, but does contain miscellaneous fittings and ancillary equipment. Samples will not be collected from this tank, but rather the tank will be dismantled, removed and disposed off Site at a RCRA-permitted landfill.

Two miscellaneous small empty tanks are also located slightly outside the Site security fence at the north end of the Site, near the emergency fire water tank. Samples will not be collected from either of these tanks, but rather the tanks will be dismantled, removed and disposed off Site at a RCRA permitted landfill.

7.7.2.2 Stainless Steel Acid Tank

The stainless steel tank (estimated 13,000-gallon capacity) situated near the northeastern portion of the former incinerator area was formerly located in the new tank farm, and purportedly was occasionally used

to store wastes. This tank is likely empty since it has been disconnected from other process equipment and is lying on its side.

This tank will be further investigated to confirm that it is empty. If the tank contains liquid, the liquid will be sampled and chemical analyses will be performed on the sample to determine if the liquid is a RCRA-characteristic hazardous waste in accordance with 40 CFR 261, and additional PCB analysis will be performed on the sample to determine if the liquid is regulated under TSCA. If the liquid is determined to be regulated under RCRA or TSCA the liquid and the tank will be removed from Site and disposed at a RCRA or TSCA permitted TSD facility, as appropriate.

If the analyses performed on the sample indicate that the liquid is not regulated under RCRA or TSCA, the liquid will be removed from the tank and disposed off Site at an industrial waste treatment facility; the tank, however, will be disposed at a RCRA-permitted landfill.

If the tank is confirmed to be empty, the tank will be dismantled and disposed off-Site at a RCRA-permitted landfill.

7.7.2.3 Underground Fuel Tank

An underground fuel tank exists on Site, as indicated by the presence of a riser/filler pipe extending from the ground near the southeastern position of the Site. It is believed that this tank is currently empty.

Reportedly (PRC, 1988), this tank was sampled by North Carolina Department of Human Services (NCDHS) in 1988, and chemical analyses performed on the sample detected the presence of 1,1,1-TCA, toluene, xylenes, ethyl benzene and a variety of substituted benzenes and hydrocarbons. With the exception of 1,1,1-TCA these compounds are typical of those naturally occurring in petroleum based fuels. The presence of 1,1,1-TCA indicates that the tank may have been used to store materials other than petroleum hydrocarbons.

This tank will be further investigated to determine if the tank contains liquid, and if so, the liquid will be sampled and chemical analyses will be performed in the sample to determine if the liquid is a RCRA-characteristic hazardous waste in accordance with 40 CFR 261, and additional PCB analysis will be performed on the sample to determine if the liquid is regulated under TSCA. If the liquid is determined to be regulated under RCRA or TSCA the liquid and the tank will be removed from Site and disposed at a RCRA or TSCA permitted TSD facility, as appropriate. If the analyses performed on the sample indicate that the liquid is not regulated under RCRA or TSCA, the liquid will be removed from the tank and disposed off Site at a POTW, industrial waste treatment facility or permitted recycler.

Regardless of whether the tank is empty, or contains regulated or non-regulated liquid, the tank will be excavated and removed from the ground, dismantled, and disposed off Site in accordance with all applicable Federal or State regulations. The base of the tank excavation will

be sampled for chemical analyses, in accordance with current State of North Carolina underground storage tank closure requirements, to confirm that the tank has not leaked hazardous constituents or petroleum hydrocarbons. Following review of the analytical results, if necessary the base of the tank excavation will be excavated further to remove residual soil contamination in accordance with criterion applicable to the cleanup of the other Site soils, or alternatively, the tank excavation will be backfilled with clean imported fill.

7.7.2.4 Emergency Fire Water Tank

A horizontal steel storage tank (estimated 6,000-gallon capacity) is located near the northern portion of the Site, just outside the Site security fence. Purportedly, this tank was used to store clean water to be used in the event of an on-Site fire. This tank will be further investigated to determine if the tank contains liquid. If the tank is determined to be empty, the tank will be dismantled and disposed off Site at a local sanitary landfill.

If the tank contains liquid, the liquid will be sampled and chemical analyses will be performed on the sample to determine the appropriate disposal mode of this material. Following removal of the liquids contained in this tank, if any, the tank will be dismantled, removed from Site and disposed in accordance with all applicable Federal or State regulations.

7.7.2.5 Underground Tanks

As noted previously, an underground septic tank is located west of the CSI office area, and an underground washwater holding tank is located south of the block building south of the office area. Although these tanks purportedly were used to contain only sanitary wastes and washwaters (from an employee shower facility), respectively, samples will be collected from each of these tanks. Chemical analyses will be performed on the samples to determine the appropriate disposal mode for the material.

Regardless of whether the tanks are empty, or contain regulated or non-regulated material, both tanks will be excavated, dismantled and disposed of off Site in accordance with all applicable Federal and State regulations. The base of the tank excavations will be sampled for chemical analyses, in accordance with current State of North Carolina underground storage tank closure requirements, to confirm that the tanks have not leaked hazardous constituents. Upon review of the analytical results, if necessary the base of the tank excavations will be excavated to remove residual soil contamination in accordance with criteria applicable to the cleanup of the other Site soils, or alternatively, the tank excavations will be backfilled with clean imported fill.

7.8 MISCELLANEOUS EQUIPMENT AND METAL DEBRIS

7.8.1 Overview

As of October 16, 1991, a considerable amount of miscellaneous equipment and metal debris was located at various locations on Site, including locations on the concrete plant slabs and also directly on the ground adjacent to the concrete slabs. This equipment included, but was not limited to the following:

1) dismantled incinerator unit and stack;
2) one partially dismantled tank; and
3) miscellaneous piping, electrical motors, small pieces of equipment and scrap metal.

The disposition of the above-noted materials is discussed in the following sections.

7.8.2 Incinerator Unit

The former incinerator unit, consisting of two steel tank-like chambers and an incinerator stack, is located on the concrete plant slab at the southwest corner of the old tank farm. The incinerator chambers and stack were decontaminated by CSI and certified as decontaminated by the State of North Carolina. The incinerator components certified as "closed" by the "State" may be disposed of as non-RCRA hazardous waste. The

remaining, non-certified components will be dismantled, removed and disposed off site at a RCRA-permitted landfill.

7.8.3 Partially Dismantled Tank

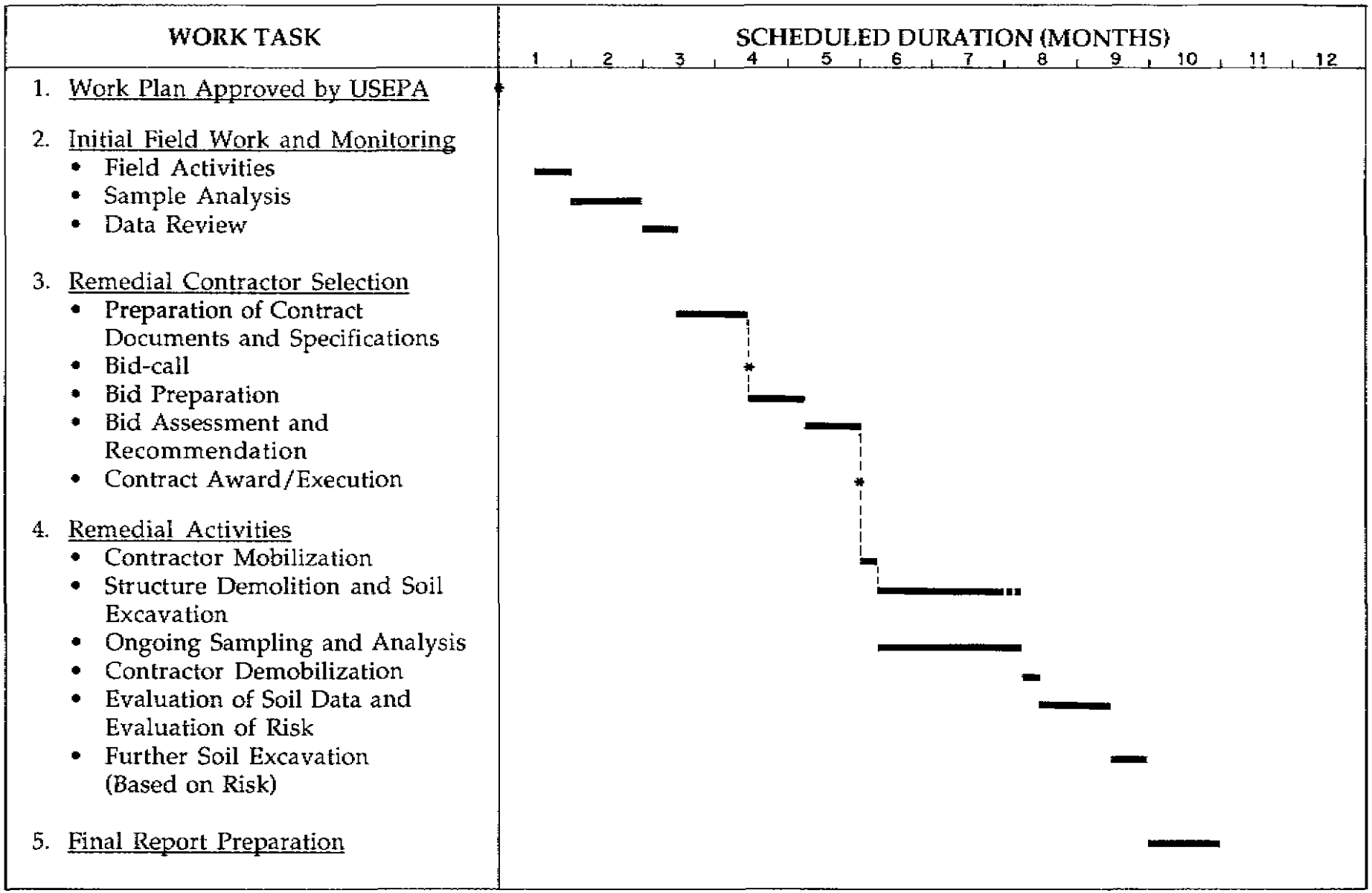
A partially dismantled tank (estimated 12,000-gallon capacity) is located directly inside the large sump of the old tank farm area. Purportedly, CSI decontaminated the tank steel and the tank was certified as decontaminated by the State of North Carolina. However, since the tank is currently partially submersed by the liquids ponded within the old tank farm sump, it is presumed that the tank can no longer be certified as decontaminated. This tank will not be sampled, but rather will be further dismantled, removed and disposed off Site at a RCRA-permitted landfill.

7.8.4 Miscellaneous Piping, Equipment and Debris

Miscellaneous piping, process equipment such as electrical motors, and scrap metal which exists on Site will not be sampled, but rather will be dismantled as necessary, removed and disposed off Site at a RCRA-permitted landfill.

8.0 PROJECT SCHEDULE

The estimated time periods to complete the scope-of-work detailed in the foregoing is presented in Figure 8.1. Based on information existing at the date of submission of this work plan, approximately ten months are estimated to undertake these activities.



Note: * Once only or Milestone Event
•••• Activity of undetermined duration

figure 8.1

SITE OPERATIONS SCHEDULE
CALDWELL SYSTEMS, INC. SITE
Lenoir, North Carolina

CRA

4154(3)-FEB. 25, 92-REV. 0-(C)

APPENDIX A

QUALITY ASSURANCE/QUALITY CONTROL REVIEW OF EXISTING DATA

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A.1 QUALITY ASSURANCE/QUALITY CONTROL REVIEW OF EXISTING DATA

A.1.1 OVERVIEW

In order to determine the overall usefulness of existing data (as a basis for determining Site conditions and selecting a remedy), available data reported for previous studies (see Section 2.4) at the Site were reviewed. In general, each report lacked the specific details and supporting documentation (such as original data reports, and field QA/QC information) necessary to conduct an independent validation of the data consistent with USEPA protocols. However, review of the data was performed in an attempt to determine the overall quality of the data reported. Where possible, blank data, field duplicate data and previously applied data qualifiers were reviewed and necessary changes/qualifications were applied. Details of the data review are provided in the following sections.

A.2 USEPA RCRA CASE DEVELOPMENT INVESTIGATION/ EVALUATION DATA - USEPA, JANUARY 29, 1988

Limited details of the field investigation performed in support of the RCRA Case Development Investigation/Evaluation at the Site were provided by USEPA. The report lacked a discussion detailing field and/or lab QA/QC procedures; however, the report did state that all sampling procedures were performed in accordance with the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, April 1, 1986. As a result, quality control samples including rinse, field, solvent and trip blanks should have been included with the samples submitted for analysis. In addition, field duplicate samples and matrix spike/matrix spike duplicate (MS/MSD) samples should have been submitted for analysis. Unfortunately, the data presented in the report consist only of select analytical results including the data for one water blank sample. The water blank contained toluene and methyl ethyl ketone (MEK) at 6.8 µg/L and 24J µg/L, respectively. No qualifications of data were deemed necessary based on these data.

As with field QA/QC data, no laboratory QA/QC data were provided in the report. No information was provided on surrogate spike recoveries, MS/MSD recoveries, check sample data, lab blank data, sample receipt data, sample extraction and/or preparation dates or date of sample analysis.

In summary, specific conclusions regarding analytical and field QA/QC cannot be drawn on the data provided by USEPA.

A.3 FINAL SAMPLING INVESTIGATION REPORT - PRC, NOVEMBER 16, 1988

A.3.1 OVERVIEW

PRC Environmental Management, Inc. (PRC), under contract to USEPA, conducted sampling at the Site during a two-week period from August 1 through August 12, 1988. In addition to completing a soil gas survey, PRC also conducted on-Site soil and off-Site surface water sampling. The results for the on-Site analysis of soil gas samples are not available. Only the summaries of soil gas results received from an off-Site laboratory are presented in the report. In addition, data summaries for the soil and surface water data are provided in tabular format in the report.

PRC states that they conducted a review of all laboratory data in accordance with standard USEPA criteria for data validation. Unfortunately, the details of this data validation are not provided with the report.

A.3.2 ANALYTICAL RESULTS - SOIL SAMPLES

According to a brief summary on data quality within the report, PRC discussed several problems associated with the data. Laboratory and field blanks associated with the soil samples contained a number of organic contaminants at low levels, including methylene chloride, acetone, 4-methyl-2-pentanone and diethylphthalate. Based on blank contamination,

PRC proceeded to qualify data with the qualifiers 'R' and 'RJ'. In using these qualifiers, PRC effectively classified many of the results to be unusable. According to the USEPA document "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses"(USEPA 1988) ("Guidelines"), associated results below 5 or 10 times the level found in the blank (depending on the particular compound) should be qualified U or J, effectively stating the results are not detected or estimated, respectively. Results above 5 or 10 times the level found in the blank should be usable without qualification. However, PRC does not appear to consistently apply their qualifications to all data. PRC states that laboratory holding times were exceeded for several of the soil samples, but no discussion of data qualifiers for these samples is provided nor is reference to the specific samples to which these holding time violations apply provided. According to "Guidelines", these results should be qualified 'J' (estimated) and the sample quantitation limits qualified 'UJ' (estimated value). If the holding times were grossly exceeded, sample data may be qualified 'R' (unusable).

In addition, PRC states that there were some problems associated with library spectrum confirmation for acetone and xylene for several samples. Consequently, PRC qualified the affected results with 'T', stating the data are suspect and questionable.

PRC states several results did not include associated matrix spike analyses. Consequently, PRC qualified associated sample results with the belief that possible matrix effects may have caused false negative results. Although this may be true, "Guidelines" stipulates that qualifications cannot be based on MS/MSD data alone, but in conjunction with other

problems with analytical data. Consequently, these results appear to be qualified in the PRC report without due cause.

PRC states that the soil sample inorganic results were acceptable but that one or more blanks (type of blank not specified) contained detectable levels of 11 metals. PRC proceeded to qualify associated sample results below 5 times the level in the blank(s) with 'JB' (estimated with associated blank contamination). According to "Guidelines", if the contamination was found in a laboratory blank, results above the instrument detection limit but below 5 times the level found in the blank should be qualified 'U' (not detected). In addition, PRC states that matrix spike recoveries were not within control limits and should be qualified 'J' (estimated).

A.3.3 SOIL GAS RESULTS

Two sets of laboratory data are presented in the PRC report, GC-MS screening data and GC data.

PRC states the GC-MS data were generally acceptable. However, there were problems with instrument calibration for acetone, chloroform and MEK. Consequently, PRC qualified associated analytical results. Also, PRC states that the GC data were acceptable; however, there were some problems with low-level calibration and the highest calibration standard was 100 μg/L. Consequently, PRC qualified all GC data below 5 μg/L and above 200 μg/L. Since these units do not correspond to the units

associated with the data presented in the report, it is difficult to determine which data PRC qualified.

PRC did not discuss the methylene chloride detected in one field equipment blank at 0.3J parts per million (ppm). Consequently, all results below approximately 3 ppm should be qualified 'J' (estimated). All these results appear to have been qualified by PRC based on the calibration problems discussed above.

PRC did not discuss field duplicate results. Upon comparison, all duplicate results showed acceptable reproducibility and no qualifications are necessary.

A.3.4 ANALYTICAL RESULTS - SPRING SAMPLES

PRC states that blank contamination was noted for a number of organic compounds. Laboratory blanks contained methylene chloride, 4-methyl-2-pentanone, diethylphthalate and di-n-butylphthalate. The field blank contained methylene chloride and acetone. PRC qualified all results below 5 or 10 times (depending on the specific compound) the levels found in the blank with 'R' (generally defined as unusable) and detection limits qualified 'UJ' (estimated). As discussed for the qualifications noted for soils, these qualifications are not consistent with "Guidelines" and levels below 5 or 10 times the levels found in the blank should be qualified 'U' (not detected).

A.4 FINAL REPORT, LISTING SITE INSPECTION, CALDWELL SYSTEMS, INC., VOLUMES I AND II - NUS CORPORATION, OCTOBER 1990

NUS states that all analytical data generated during their Site investigation were subjected to a quality assurance review as described in the EPA Environmental Services Division Laboratory data guidelines. NUS does not however, elaborate on this or discuss who performed the review. Consequently, laboratory qualifiers added at the time of data reporting may be considered as a data review by NUS. Nevertheless, very limited QA/QC information is provided within the report. Along with the analytical data reports, trip blank data were provided. One trip blank dated May 21, 1990 was shown to contain toluene at 5J µg/L. No other information was provided within the report in order to determine to which samples this blank result would apply. Consequently, no qualifications can be made.

As stated in the report, samples were submitted to six laboratories for analysis. Because of this, problems with consistency and reproducibility may result. However, based on the information provided in the report, no qualifications can be made. Therefore, it can be assumed that the data presented in the NUS report are accurate and useable.

A.5 SAMPLING INVESTIGATION - USEPA, SEPTEMBER 1990 THROUGH APRIL 1991

According to USEPA's report entitled, "Sampling Investigation Report for the Caldwell Systems Inc. Site - Lenoir, Caldwell County, North Carolina", USEPA's study was based upon implementation of the sampling investigation proposed in the report "Work Plan for the Sampling Investigation at the Caldwell Site, Lenoir, North Carolina" (Work Plan), prepared by USEPA, dated October/November 1990. Although USEPA includes QA/QC information within the text, review and interpretation of the data are difficult in several cases. Several discrepancies exist between the sample key and the analytical reports, or alternatively; some data are not included or could not be located for review. USEPA stated that the field sampling procedures were performed in accordance with the Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, April 1986 and laboratory analysis was performed in accordance with the Contract Laboratory Program (CLP) or Environmental Services Division (ESD) routine analytical services.

There appears to be some acetone contamination in a blank sample. This is demonstrated by the acetone result of 13B mg/kg in off-Site soil sample 90-SL. The 'B' qualifier is generally used to show the presence of associated blank contamination; however, no other information is provided and no review or qualification can be made from this information. Upon review of the blank results included within the report, the presence of acetone was not evident in any sample; however, isopropanol contamination was suspected in a field blank and a rinse blank. Because the

investigative samples with which these two blank samples were collected are not known, no data qualifications can be made.

Duplicate sample results presented in the report demonstrate acceptable laboratory and/or field sampling reproducibility. Therefore, no qualifications were deemed necessary based on the sampling and analytical information provided within the report.

On the basis of the information provided in the report, no data qualifications were deemed necessary. Therefore, it can be assumed that all data provided by USEPA are accurate and useable until such time as further information is provided and data qualifications deemed necessary.

APPENDIX B

ANALYTICAL DATA SUMMARIES - SOIL AND CONCRETE SAMPLES

USEPA SAMPLING ACTIVITIES

OCTOBER/NOVEMBER/DECEMBER 1990

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 0 - 1 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE ID.	57-SL	43-SL	29-SL	15-SL	58-SL	44-SL	30-SL	16-SL	59-SL	45-SL	31-SL
Metals (mg/kg)											
Aluminum	29,000.0	24,000.0	27,000.0	22,000.0	42,000.0	27,000.0	21,000.0	9,900.0	39,000.0	27,000.0	27,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	51.0 J	35.0	60.0	51.0	91.0	59.0	100.0	73.0	110.0	100.0	120.0
Beryllium	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	2.0
Cadmium	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	82.0	ND	160.0	ND	ND	ND	770.0	1,600.0	ND	180.0	360.0
Chromium	39.0	30.0	27.0	12.0	24.0	24.0	41.0	12.0	29.0	25.0	33.0
Cobalt	6.1	3.2	3.5	3.4	9.5	5.9	8.5	5.7	7.4	6.8	9.8
Copper	ND	5.3	6.5	3.8	5.9	5.7	60.0	10.0	6.4	6.8	9.5
Iron	21,000.0	17,000.0	2,800.0	16,000.0	23,000.0	22,000.0	23,000.0	15,000.0	28,000.0	23,000.0	28,000.0
Lead	16.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	3,000.0	1,200.0	2,300.0	2,000.0	2,300.0	2,100.0	5,500.0	4,300.0	4,600.0	3,900.0	5,400.0
Manganese	94.0	96.0	140.0	100.0	240.0	190.0	370.0	270.0	220.0	300.0	680.0
Mercury	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	0.1	0.1
Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	13.0	ND	6.9	4.4	9.2	6.9	16.0	5.5	12.0	7.6	12.0
Potassium	2,200.0	1,200.0	2,600.0	2,800.0	2,700.0	2,200.0	5,600.0	5,400.0	5,300.0	4,200.0	6,000.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	620.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Strontium	NA	3.2	3.2	2.8	4.2	ND	6.1	3.1	ND	3.2	ND
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	NA	570.0	1,200.0	960.0	1,100.0	940.0	1,400.0	970.0	1,800.0	1,400.0	1,800.0
Vanadium	34.0	32.0	50.0	23.0	36.0	35.0	48.0	31.0	46.0	37.0	57.0
Yttrium	NA	4.8	5.8	8.7	8.6	7.0	9.2	3.3	11.0	9.0	11.0
Zinc	37.0	26.0	39.0	37.0	46.0	36.0	61.0	36.0	60.0	53.0	58.0
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)	0	0	0	0	0	0	0	0	0	0	0
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)	0	0	0	0	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT/NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / DETECTED PARAMETER	57-SL	43-SL	29-SL	15-SL	58-SL	44-SL	30-SL	16-SL	59-SL	45-SL	31-SL
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	410.0 UR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	200.0 JN	ND	ND	ND	ND	ND
Dimethoxyphenol	1,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	200.0 JN	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*57-SL*	*43-SL*	*29-SL*	*15-SL*	*58-SL*	*44-SL*	*30-SL*	*16-SL*	*59-SL*	*45-SL*	*31-SL*
DETECTED PARAMETER											
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	20,000.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Extractable Organics (ug/kg)	21,000 J	0	200 J	0	0	200 J	0	0	0	0	0
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)											
TEQ	6.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE ID.	17-SL	3-SL	60-SL	46-SL	32-SL	18-SL	4-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)												
Aluminum	21,000.0	12,000.0	35,000.0	27,000.0	20,000.0	20,000.0	11,000.0	24,494.44	18	18	42,000.00	9,900.00
Antimony	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Arsenic	ND	ND	ND	ND	ND	3.3 J	ND	3.30	1	18	3.30	3.30
Barium	120.0	110.0	92.0	140.0	83.0	90.0 J	120.0	89.17	18	18	140.00	35.00
Beryllium	ND	ND	ND	ND	ND	ND	ND	1.70	2	18	2.00	1.40
Cadmium	ND	ND	ND	ND	ND	2.3	ND	1.75	2	18	2.30	1.20
Calcium	1,900.0	1,600.0	ND	290.0	390.0	950.0	1,700.0	831.83	12	18	1,900.00	82.00
Chromium	28.0	12.0	14.0	15.0	44.0	38.0	20.0	25.94	18	18	44.00	12.00
Cobalt	9.8	9.6	6.1	5.9	7.9	10.0	9.8	7.16	18	18	10.00	3.20
Copper	13.0	14.0	4.2	5.2	11.0	18.0	29.0	12.61	17	18	60.00	3.80
Iron	26,000.0	20,000.0	24,000.0	25,000.0	29,000.0	27,000.0	16,000.0	21,433.33	18	18	29,000.00	2,800.00
Lead	ND	ND	ND	ND	26.0	18.0 J	ND	20.00	3	18	26.00	16.00
Magnesium	7,700.0	6,800.0	3,100.0	4,400.0	4,300.0	5,300.0	7,200.0	4,188.89	18	18	7,700.00	1,200.00
Manganese	480.0	400.0	150.0	270.0	290.0	390.0	300.0	276.67	18	18	680.00	94.00
Mercury	ND	ND	0.1	ND	0.1	ND	ND	0.08	6	18	0.10	0.07
Molybdenum	ND	ND	ND	ND	ND	NA	ND	#DIV/0!	0	18	0.00	0.00
Nickel	14.0	6.1	ND	ND	12.0	12.0	12.0	9.97	15	18	16.00	4.40
Potassium	8,700.0	8,900.0	3,800.0	4,900.0	4,500.0	5,500.0	7,200.0	4,650.00	18	18	8,900.00	1,200.00
Selenium	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Silver	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Sodium	ND	ND	ND	ND	ND	780.0 J	ND	700.00	2	18	780.00	620.00
Strontium	4.3	3.1	4.6	4.7	ND	NA	2.5	3.75	12	18	6.10	2.50
Tellurium	ND	ND	ND	ND	ND	NA	ND	#DIV/0!	0	18	0.00	0.00
Tin	ND	ND	ND	ND	ND	NA	ND	#DIV/0!	0	18	0.00	0.00
Titanium	1,700.0	1,400.0	1,500.0	1,800.0	1,500.0	NA	1,400.0	1,340.00	16	18	1,800.00	570.00
Vanadium	61.0	49.0	28.0	37.0	52.0	50.0	42.0	41.56	18	18	61.00	23.00
Yttrium	8.1	4.2	8.6	8.6	10.0	NA	4.1	7.62	16	18	11.00	3.30
Zinc	57.0	50.0	52.0	60.0	49.0	47.0	31.0	46.39	18	18	61.00	26.00
Pesticides (ug/kg)												
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
OP-DDE	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Total Pesticides (ug/kg)	0	0	0	0	0	0	0					
PCBs (ug/kg)												
PCB-1248	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
PCB-1254	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Total PCBs (ug/kg)	0	0	0	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE ID.	17-SL	3-SL	60-SL	46-SL	32-SL	18-SL	4-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)												
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
(Methylethyl) Methyl Ester	ND	ND	ND	ND	80.0 JN	ND	ND	80.00	1	18	80.00	80.00
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	410.00	1	18	410.00	410.00
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Chrysene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	200.00	1	18	200.00	200.00
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	1,000.00	1	18	1,000.00	1,000.00
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Eicosene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Hexadecanoic Acid	ND	ND	200.0 JN	ND	ND	ND	ND	200.00	2	18	200.00	200.00
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Lupenone	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Methylbenzenesulfonamide	ND	200.0 JN	ND	ND	ND	ND	ND	200.00	1	18	200.00	200.00
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	400.0 JN	400.00	1	18	400.00	400.00
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	400.0 JN	400.00	1	18	400.00	400.00
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Naphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Octadecanal	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / DETECTED PARAMETER	17-SL	3-SL	60-SL	46-SL	32-SL	18-SL	4-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Petroleum Product	N	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phenol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Taraxerol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Terphenyl	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Tocopherol	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Unidentified Compound	ND	ND	ND	ND	ND	500.0 J	ND	10,250.00	2	18	20,000.00	500.00
Total Extractable Organics (ug/kg)	0	200 J	200 J	0	80 J	500 J	800 J					
Purgeable Organic Compounds (ug/kg)												
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
o-Xylene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	#DIV/0!	0	18	0.00	0.00
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0					
Dioxin/Furan Compounds (ng/kg)												
TEQ	NA	NA	NA	NA	NA	6.2 J	NA	6.3	2	18	6.3	6.2

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	61-SL	47-SL	33-SL	19-SL	5-SL	62-SL	48-SL	34-SL	20-SL	6-SL	63-SL
Metals (mg/kg)											
Aluminum	16,000.0	28,000.0	15,000.0	11,000.0	8,400.0	23,000.0	16,000.0	12,000.0	11,000.0	27,000.0	16,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	2.0	ND	ND	ND	ND	19.0	ND	ND	ND	ND	18.0
Barium	42.0 J	130.0	240.0 J	120.0	56.0	110.0 J	52.0	120.0	100.0	140.0	62.0 J
Beryllium	ND	2.1	ND	ND	0.6	ND	ND	ND	ND	ND	1.2
Cadmium	ND	ND	2.4	ND	ND	1.6	ND	ND	ND	ND	1.3
Calcium	150.0	350.0	2,400.0	1,100.0	180.0	170.0	150.0	1,600.0	2,500.0	1,300.0	130.0
Chromium	11.0	48.0	33.0	16.0	6.1	36.0	18.0	18.0	15.0	54.0	21.0
Cobalt	3.2	11.0	15.0	9.7	4.3	8.0	4.7	9.9	8.9	11.0	6.5
Copper	ND	12.0	49.0	15.0	1.9	ND	5.0	37.0	34.0	31.0	ND
Iron	12,000.0	25,000.0	25,000.0	19,000.0	5,800.0	22,000.0	11,000.0	19,000.0	20,000.0	26,000.0	18,000.0
Lead	13.0 J	ND	9.8 J	23.0	8.5	17.0 J	ND	31.0	ND	28.0	9.7 J
Magnesium	1,500.0	6,400.0	8,500.0	4,800.0	910.0	4,900.0	1,600.0	5,300.0	6,500.0	7,000.0	2,900.0
Manganese	120.0	560.0	470.0	680.0	140.0	260.0	290.0	490.0	410.0	470.0	160.0
Mercury	ND	0.1	ND	ND	ND	ND	0.09	ND	ND	ND	ND
Molybdenum	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	19.0	18.0	8.5	ND	14.0	4.0	7.3	13.0	19.0	ND
Potassium	1,200.0	5,800.0	10,000.0	6,100.0	1,300.0	4,700.0	1,100.0	5,800.0	8,200.0	6,800.0	2,700.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	3.2	ND	ND
Sodium	310.0 J	ND	810.0 J	ND	ND	550.0 J	ND	240.0	230.0	ND	420.0 J
Strontium	NA	3.9	NA	4.0	ND	NA	2.3	5.4	5.7	14.0	NA
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tin	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	NA	1,700.0	NA	1,200.0	500.0	NA	610.0	1,400.0	1,300.0	1,800.0	NA
Vanadium	15.0	52.0	50.0	38.0	6.9	38.0	23.0	42.0	48.0	58.0	37.0
Yttrium	NA	14.0	NA	6.5	9.1	NA	6.6	5.9	4.0	10.0	NA
Zinc	24.0	69.0	59.0	55.0	35.0	55.0	52.0	62.0	68.0	120.0	40.0
Pesticides (µg/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	85.0	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	160.0	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	96.0	ND
Total Pesticides (µg/kg)	0	0	0	0	0	0	0	0	0	341	0
PCBs (µg/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	ND	1,800.0 C	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (µg/kg)	0	0	0	0	0	0	0	1,800	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	61-SL	47-SL	33-SL	19-SL	5-SL	62-SL	48-SL	34-SL	20-SL	6-SL	63-SL
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	73.0 J	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	300.0 JN	ND	ND	ND	ND	300.0 JN	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	600.0 JN	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	970.0	ND	ND	ND	ND	1,600.0	33,000.0	ND	2,900.0	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	2,000.0 JN	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	620.0 J	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	900.0 JN	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	700.0 JN	ND	ND	ND	ND	700.0 JN	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	61-SL	47-SL	33-SL	19-SL	5-SL	62-SL	48-SL	34-SL	20-SL	6-SL	63-SL
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	N	ND	ND	ND	ND	N	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND	ND	ND	160.0 J	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	500.0 JN	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	300.0 JN	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	200.0 JN	200.0 JN	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	100.0 JN	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	2,000.0 JN	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	100.0 JN	ND	ND	ND	ND	100.0 JN	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	500.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	20,000.0 J	ND	ND	30,000 J	ND	20,000 J	ND	1,000.0 J	ND	ND	6,000 J
Total Extractable Organics (µg/kg)	20,500 J	2,070 J	0	30,000 J	0	24,900 J	2,900 J	36,253 J	0	3,200 J	6,000 J
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (µg/kg)	0	0	0	0	0	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)											
TEQ	6.4 J	NA	3.1 J	NA	NA	3.4 J	NA	NA	NA	NA	5.5 J

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	49-SL	35-SL	21-SL	7-SL	64-SL	50-SL	36-SL	22-SL	8-SL	85-SL	65-SL
Metals (mg/kg)											
Aluminum	16,000.0	19,000.0	11,000.0	21,000.0	18,000.0	11,000.0	22,000.0	23,000.0	19,000.0	12,000.0	19,000.0
Antimony	ND	98.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	18.0	ND	ND	ND	15.0	ND	ND	ND	ND	ND	14.0
Barium	100.0	310.0	690.0 J	120.0	51.0 J	48.0	180.0	110.0	200.0	100.0 J	57.0 J
Beryllium	1.2	1.6	ND	ND	ND	1.2	1.7	1.8	ND	ND	ND
Cadmium	ND	3.2	2.0	ND	2.3	ND	ND	ND	ND	1.6	1.4
Calcium	440.0	2,400.0	1,900.0	1,400.0	110.0	86.0	1,500.0	530.0	3,000.0	1,200.0	75.0
Chromium	25.0	79.0	20.0	33.0	23.0	19.0	32.0	14.0	41.0	25.0	23.0
Cobalt	8.2	20.0	11.0	8.4	8.4	6.8	11.0	9.8	13.0	9.1	8.4
Copper	8.6	130.0	41.0	27.0	ND	5.4	29.0	11.0	57.0	ND	ND
Iron	18,000.0	23,000.0	17,000.0	24,000.0	2,500.0	13,000.0	27,000.0	26,000.0	26,000.0	18,000.0	20,000.0
Lead	28.0	280.0	41.0 J	22.0	9.6 J	15.0	38.0	ND	52.0	6.4 J	9.6 J
Magnesium	3,100.0	5,100.0	5,100.0	5,900.0	2,000.0	1,300.0	6,700.0	5,800.0	7,200.0	5,800.0	2,500.0
Manganese	280.0	1,100.0	380.0	410.0	400.0	120.0	510.0	1,000.0	500.0	350.0	120.0
Mercury	0.10	0.13	ND	ND	ND	0.10	0.09	ND	0.06	ND	ND
Molybdenum	ND	14.0	NA	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	4.8	24.0	ND	12.0	ND	3.3	13.0	7.8	16.0	10.0	7.3
Potassium	2,200.0	4,800.0	6,100.0	6,700.0	ND	480.0	7,200.0	7,000.0	8,600.0	6,700.0	13,000.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	370.0	470.0 J	ND	570.0	ND	ND	ND	ND	550.0 J	500.0 J
Strontium	4.9	14.0	NA	5.9	ND	1.8	6.9	ND	13.0	NA	ND
Tellurium	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	1,200.0	1,500.0	NA	1,600.0	ND	580.0	1,900.0	1,800.0	1,800.0	NA	ND
Vanadium	46.0	56.0	35.0	56.0	59.0	30.0	69.0	58.0	56.0	40.0	50.0
Yttrium	7.7	9.8	NA	6.5	ND	7.5	9.7	10.0	6.4	NA	ND
Zinc	58.0	380.0	140.0	84.0	37.0	30.0	160.0	84.0	140.0	46.0	43.0
Pesticides (µg/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	44.0	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (µg/kg)	0	0	0	0	0	44	0	0	0	0	0
PCBs (µg/kg)											
PCB-1248	ND	2,800.0 C	560	ND	ND	ND	1,400.0	ND	ND	ND	ND
PCB-1254	ND	2,000.0 C	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (µg/kg)	0	4,800	560	0	0	0	1,400	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	49-SL	35-SL	21-SL	7-SL	64-SL	50-SL	36-SL	22-SL	8-SL	85-SL	65-SL
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	81.0 J	ND	ND	ND	ND	ND	ND	ND	94.0 J	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	80.0 JN	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	100.0 JN	ND	ND	ND	ND	80.0 JN	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	4,100.0	210,000	4,900.0	3,700.0	ND	ND	64,000.0	ND	4,000.0	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	620.0 J	ND	ND	ND	ND	ND	ND	85.0 J	ND	ND
Cyclohexyldienebisbenzene	ND	10,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	3,500.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	100.0 JN	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	80.0 J	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	4,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	2,000.0 JN	ND	ND	ND	ND	ND	3,000.0 JN
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*49-SL*	*35-SL*	*21-SL*	*7-SL*	*64-SL*	*50-SL*	*36-SL*	*22-SL*	*8-SL*	*85-SL*	*65-SL*
DETECTED PARAMETER											
Oxybisbenzene	ND	500.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	ND	ND	ND	ND	N	ND	ND	N	ND	ND
Phenol	190.0 J	ND	ND	80.0 J	ND	ND	ND	ND	400.0 J	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND	3,000.0 JN	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixyxlohexyl (3 isomers)	ND	40,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	2,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	7,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	10,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	100.0 JN	ND	ND	200.0 JN	ND	300.0 JN	2,000.0 JN	ND	200.0 JN	ND	ND
Quaterphenyl	ND	5,000.0 JN	ND	ND	ND	ND	ND	ND	500.0 JN	ND	ND
Taraxerol	ND	ND	ND	ND	4,000.0 JN	ND	ND	ND	ND	ND	3,000.0 JN
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND	400.0 JN	ND	ND
Terphenyl (2 isomers)	ND	5,000.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	700.0 JN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	100,000 J	ND	ND	20,000.0 J	ND	ND	ND	ND	ND	20,000.0 J
Total Extractable Organics (µg/kg)	4,571 J	398,320 J	4,900	3,980 J	26,080 J	460 J	66,000 J	0	8,779 J	0	26,000 J
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	41.0 J	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (µg/kg)	0	0	0	41 J	0	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)											
TEQ	NA	NA	38.0	NA	0.43 J	NA	NA	NA	NA	1.5 J	1.4

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / *BOREHOLE I.D.*	*51-SL*	*37-SL*	*23-SL*	*9-SL*	*66-SL*	*52-SL*	*38-SL*	*24-SL*
Metals (mg/kg)								
Aluminum	23,000.0	13,000.0	30,000.0	14,000.0	11,000.0	27,000.0	24,000.0	21,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	19.0	ND	ND	ND	ND	18.0	ND	9.0
Barium	110.0	120.0	94.0	130.0	32.0	110.0	210.0	130.0 J
Beryllium	2.1	1.9	ND	ND	1.2	2.6	1.8	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND	1.6
Calcium	ND	830.0	180.0	2,400.0	ND	ND	6,300.0	760.0
Chromium	31.0	14.0	15.0	18.0	22.0	48.0	52.0	41.0
Cobalt	8.3	7.1	16.0	9.3	5.3	9.3	14.0	12.0
Copper	7.3	9.2	ND	23.0	3.6	9.6	21.0	18.0
Iron	35,000.0	1,700.0	16,000.0	20,000.0	9,700.0	36,000.0	28,000.0	23,000.0
Lead	ND	ND	30.0	ND	ND	ND	ND	13.0 J
Magnesium	3,700.0	3,600.0	3,800.0	6,400.0	1,200.0	3,900.0	9,600.0	6,300.0
Manganese	150.0	1,400.0	770.0	410.0	180.0	190.0	650.0	410.0
Mercury	0.23	0.06	0.32	ND	0.06	0.35	0.06	ND
Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	7.6	5.2	6.4	8.7	7.3	12.0	22.0	15.0
Potassium	2,000.0	4,000.0	4,400.0	7,600.0	570.0	2,200.0	10,000.0	6,100.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND	650.0 J
Strontium	3.1	2.6	ND	6.2	ND	ND	11.0	NA
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	1,700.0	920.0	1,200.0	1,400.0	570.0	1,600.0	2,500.0	NA
Vanadium	100.0	36.0	30.0	45.0	21.0	98.0	64.0	48.0
Yttrium	13.0	7.8	7.0	5.1	4.1	11.0	14.0	NA
Zinc	54.0	53.0	55.0	68.0	26.0	55.0	120.0	58.0
Pesticides (µg/kg)								
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (µg/kg)	0	0	0	0	0	0	0	0
PCBs (µg/kg)								
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (µg/kg)	0	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / *DETECTED PARAMETER*	*51-SL*	*37-SL*	*23-SL*	*9-SL*	*66-SL*	*52-SL*	*38-SL*	*24-SL*
Extractable Organic Compounds (ug/kg)								
(3- and/or 4-) Methylphenol	ND	ND	ND	74.0 J	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	69.0 J	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	1,100.0	ND	3,000.0	ND	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	90.0 JN	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	100.0 JN	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	90.0 JN	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*51-SL*	*37-SL*	*23-SL*	*9-SL*	*66-SL*	*52-SL*	*38-SL*	*24-SL*
DETECTED PARAMETER								
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	N	N	N	ND	N	N	ND	ND
Phenol	ND	ND	ND	260.0 J	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	80.0 JN	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	300.0 JN	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	2,000.0 J	ND	ND	ND	ND	ND	ND	ND
Total Extractable Organics (µg/kg)	2,000 J	1,100	90 J	3,973 J	0	0	0	0
Purgeable Organic Compounds (µg/kg)								
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (µg/kg)	0	0	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)								
TEQ	NA	NA	NA	NA	NA	NA	NA	1.3

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER	*BOREHOLE I.D.*	*AVER.*	*FREQ. OF DETECT.*	*NO. OF SAMPLES*	*MAX.*	*MIN.*
Metals (mg/kg)						
Aluminum		17,913.33	30	30	30,000.00	8,400.00
Antimony		98.00	1	30	98.00	98.00
Arsenic		14.67	9	30	19.00	2.00
Barium		135.80	30	30	690.00	32.00
Beryllium		1.62	13	30	2.60	0.62
Cadmium		1.93	9	30	3.20	1.30
Calcium		1,227.44	27	30	6,300.00	75.00
Chromium		28.37	30	30	79.00	6.10
Cobalt		9.59	30	30	20.00	3.20
Copper		25.46	23	30	130.00	1.90
Iron		19,556.67	30	30	36,000.00	1,700.00
Lead		34.23	20	30	280.00	6.40
Magnesium		4,643.67	30	30	9,600.00	910.00
Manganese		446.00	30	30	1,400.00	120.00
Mercury		0.13	13	30	0.35	0.06
Molybdenum		14.00	1	30	14.00	14.00
Nickel		11.41	25	30	24.00	3.30
Potassium		5,287.93	29	30	13,000.00	480.00
Selenium		#DIV/0!	0	30	0.00	0.00
Silver		3.20	1	30	3.20	3.20
Sodium		472.50	12	30	810.00	230.00
Strontium		6.54	16	30	14.00	1.80
Tellurium		#DIV/0!	0	30	0.00	0.00
Tin		#DIV/0!	0	30	0.00	0.00
Titanium		1,370.48	21	30	2,500.00	500.00
Vanadium		46.83	30	30	100.00	6.90
Yttrium		8.37	21	30	14.00	4.00
Zinc		77.67	30	30	380.00	24.00
Pesticides (µg/kg)						
4,4'-DDD		#DIV/0!	0	30	0.00	0.00
Alpha-chlordane/2		85.00	1	30	85.00	85.00
Gamma-chlordane/2		160.00	1	30	160.00	160.00
OP-DDE		44.00	1	30	44.00	44.00
Trans-nonachlor/2		96.00	1	30	96.00	96.00
Total Pesticides (µg/kg)						
PCBs (µg/kg)						
PCB-1248		1,640.00	4	30	2,800.00	560.00
PCB-1254		2,000.00	1	30	2,000.00	2,000.00
Total PCBs (µg/kg)						

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)					
(3- and/or 4-) Methylphenol	80.50	4	30	94.00	73.00
(Diethylmethyl) Phenol	#DIV/0!	0	30	0.00	0.00
(Dimethylethyl) Methylphenol	226.67	3	30	300.00	80.00
(Dimethylethyl) Phenol	90.00	2	30	100.00	80.00
(Methylethyl) Methyl Ester	#DIV/0!	0	30	0.00	0.00
1,2,4-Trichlorobenzene	#DIV/0!	0	30	0.00	0.00
1-Methylnaphthalene	#DIV/0!	0	30	0.00	0.00
2-Chloronaphthalene	#DIV/0!	0	30	0.00	0.00
2-Methylnaphthalene	#DIV/0!	0	30	0.00	0.00
4-Chloro-3-Methylphenol	69.00	1	30	69.00	69.00
Bicyclohexylphenyl (2 isomers)	600.00	1	30	600.00	600.00
Bis (2-Ethylhexyl) Phthalate	27,772.50	12	30	210,000.00	970.00
Bis (Dimethylethyl) Methylphenol	#DIV/0!	0	30	0.00	0.00
Chlorophenoxypropanol	#DIV/0!	0	30	0.00	0.00
Chrysene	352.50	2	30	620.00	85.00
Cyclohexyldienebisbenzene	10,000.00	1	30	10,000.00	10,000.00
Cyclopropazulene	2,000.00	1	30	2,000.00	2,000.00
Decahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	30	0.00	0.00
Decahydrotetramethylmethanoazulene	#DIV/0!	0	30	0.00	0.00
Di-N-Octylphthalate	2,060.00	2	30	3,500.00	620.00
Diethylbenzene (2 isomers)	#DIV/0!	0	30	0.00	0.00
Dihydrodimethylindene	#DIV/0!	0	30	0.00	0.00
Diisocyanatomethylbenzene	100.00	1	30	100.00	100.00
Dimethoxy (propenyl) Phenol	#DIV/0!	0	30	0.00	0.00
Dimethoxyphenol	900.00	1	30	900.00	900.00
Dimethyl (Propenyl) Phenol	#DIV/0!	0	30	0.00	0.00
Dimethylethylphenol	#DIV/0!	0	30	0.00	0.00
Dimethylnaphthalene (2 isomers)	#DIV/0!	0	30	0.00	0.00
Dimethylphenol (not 2,4)	85.00	2	30	90.00	80.00
Docosanoic Acid	#DIV/0!	0	30	0.00	0.00
Eicosene	#DIV/0!	0	30	0.00	0.00
Ethenylnaphthalene	#DIV/0!	0	30	0.00	0.00
Ethyldimethylbenzene (2 isomers)	#DIV/0!	0	30	0.00	0.00
Ethylmethylbenzenesulfonamide	#DIV/0!	0	30	0.00	0.00
Hexadecanoic Acid	1,800.00	3	30	4,000.00	700.00
Hydroxyphenylpropanoic Acid	#DIV/0!	0	30	0.00	0.00
Lupenone	2,500.00	2	30	3,000.00	2,000.00
Methyl (Propenyl) Benzene	#DIV/0!	0	30	0.00	0.00
Methylbenzenesulfonamide	#DIV/0!	0	30	0.00	0.00
Methylbenzenesulfonamide (2 isomers)	#DIV/0!	0	30	0.00	0.00
Methylheptadecanoic acid, methyl ester	#DIV/0!	0	30	0.00	0.00
Methylpentadecanoic acid, methyl ester	#DIV/0!	0	30	0.00	0.00
Methylpropylbenzene (2 isomers)	#DIV/0!	0	30	0.00	0.00
Methylpyrrolidinone	#DIV/0!	0	30	0.00	0.00
Naphthalene	#DIV/0!	0	30	0.00	0.00
Nonylphenol (2 isomers)	100.00	1	30	100.00	100.00
Octadecanal	#DIV/0!	0	30	0.00	0.00
Octahydromethanoindenobisoxirene	90.00	1	30	90.00	90.00

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Oxybisbenzene	500.00	1	30	500.00	500.00
Petroleum Product	#DIV/0!	0	30	0.00	0.00
Phenol	218.00	5	30	400.00	80.00
Phenoxybiphenyl	1,540.00	2	30	3,000.00	80.00
Phenylbicyclohexyl	#DIV/0!	0	30	0.00	0.00
Phenylbixyxlohexyl (3 isomers)	40,000.00	1	30	40,000.00	40,000.00
Phenylterphenyl	2,000.00	1	30	2,000.00	2,000.00
Phosphoric Acid, Ethylhexyldiphenyl Ester	3,750.00	2	30	7,000.00	500.00
Phosphoric Acid, Tris (methylphenyl) Ester	#DIV/0!	0	30	0.00	0.00
Phthalic Acid	5,150.00	2	30	10,000.00	300.00
Phthalic Anhydride	437.50	8	30	2,000.00	100.00
Quaterphenyl	2,750.00	2	30	5,000.00	500.00
Taraxerol	3,500.00	2	30	4,000.00	3,000.00
Terphenyl	250.00	2	30	400.00	100.00
Terphenyl (2 isomers)	5,000.00	1	30	5,000.00	5,000.00
Terphenyl Phenozybiphenyl (2 isomers)	#DIV/0!	0	30	0.00	0.00
Tetradecadiene	2,000.00	1	30	2,000.00	2,000.00
Tetradecanoic Acid	100.00	2	30	100.00	100.00
Tetrahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	30	0.00	0.00
Tetrahydromethylnaphthalene	#DIV/0!	0	30	0.00	0.00
Tetramethylbenzne (2 isomers)	#DIV/0!	0	30	0.00	0.00
Tocopherol	500.00	1	30	500.00	500.00
Trimethylphenyldihydroindene	700.00	1	30	700.00	700.00
Unidentified Compound	24,333	9	30	100,000	1,000.00
Total Extractable Organics (µg/kg)					
Purgeable Organic Compounds (µg/kg)					
Methylene Chloride	41.00	1	30	41.00	41.00
(m- and/or p-) Xylene	#DIV/0!	0	30	0.00	0.00
o-Xylene	#DIV/0!	0	30	0.00	0.00
Ethylmethylbenzene	#DIV/0!	0	30	0.00	0.00
Total Purgeable Organics (µg/kg)					
Dioxin/Furan Compounds (ng/kg)					
TEQ	6.8	9	30	38.0	0.43

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*67-SL*	*53-SL*	*39-SL*	*25-SL*	*68-SL*	*54-SL*	*40-SL*	*26-SL*
DETECTED PARAMETER								
Metals (mg/kg)								
Aluminum	17,000.0	24,000.0	16,000.0	28,000.0	38,000.0	31,000.0	14,000.0	19,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	18.0	ND	ND	ND	ND	ND	7.7
Barium	54.0	88.0	210.0	190.0	110.0	91.0	110.0	140.0 J
Beryllium	1.9	2.2	1.5	1.8	3.6	3.3	1.0	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND	2.1
Calcium	120.0	170.0	1,400.0	790.0	ND	160.0	1,800.0	1,100.0
Chromium	35.0	55.0	42.0	43.0	44.0	59.0	42.0	48.0
Cobalt	6.6	7.6	12.0	6.6	8.3	7.4	9.8	12.0
Copper	5.3	7.0	32.0	23.0	9.1	11.0	21.0	25.0
Iron	13,000.0	20,000.0	23,000.0	31,000.0	25,000.0	31,000.0	25,000.0	28,000.0
Lead	ND	ND	21.0	39.0	ND	ND	ND	28.0 J
Magnesium	2,300.0	3,700.0	8,400.0	4,000.0	4,100.0	4,100.0	6,300.0	7,600.0
Manganese	140.0	180.0	440.0	270.0	190.0	220.0	380.0	470.0
Mercury	0.08	0.15	0.06	0.14	0.07	0.30	0.06	ND
Molybdenum	ND	ND	ND	ND	ND	ND	ND	NA
Nickel	9.6	13.0	14.0	10.0	16.0	15.0	14.0	16.0
Potassium	1,100.0	2,100.0	9,000.0	3,700.0	2,400.0	2,300.0	6,900.0	7,600.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND	760.0 J
Strontium	2.5	3.7	17.0	6.2	4.8	3.4	4.3	ND
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	940.0	1,400.0	2,000.0	1,400.0	1,700.0	1,700.0	1,500.0	NA
Vanadium	28.0	42.0	55.0	64.0	54.0	68.0	54.0	58.0
Yttrium	4.4	6.6	8.9	8.1	7.4	6.2	6.5	NA
Zinc	33.0	42.0	82.0	72.0	48.0	49.0	49.0	78.0
Pesticides (ug/kg)								
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)	0	0	0	0	0	0	0	0
PCBs (ug/kg)								
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)	0	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / DETECTED PARAMETER	67-SL	53-SL	39-SL	25-SL	68-SL	54-SL	40-SL	26-SL
Extractable Organic Compounds (ug/kg)								
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	2,200.0	ND	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	300.0 JN	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	90.0 JN	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	80.0 JN	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*67-SL*	*53-SL*	*39-SL*	*25-SL*	*68-SL*	*54-SL*	*40-SL*	*26-SL*
DETECTED PARAMETER								
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	N	N	ND	ND	N	ND	ND	ND
Phenol	ND	ND	ND	250.0 J	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	300.0 JN	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	ND	ND	ND	ND	ND	ND	ND
Total Extractable Organics (ug/kg)	0	170 J	300 J	2,450 J	0	0	300 J	0
Purgeable Organic Compounds (ug/kg)								
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)								
TEQ	NA	NA	NA	NA	NA	NA	NA	1.9 J

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*69-SL*	*55-SL*	*41-SL*	*27-SL*	*70-SL*	*56-SL*	*42-SL*	*28-SL*
DETECTED PARAMETER								
Metals (mg/kg)								
Aluminum	38,000.0	42,000.0	40,000.0	18,000.0	24,000.0	40,000.0	39,000.0	14,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	ND	2.6	ND	ND	ND
Barium	140.0	100.0	130.0	140.0	90.0 J	94.0	150.0	86.0
Beryllium	4.0	3.6	2.7	ND	ND	2.9	3.2	ND
Cadmium	ND	ND	ND	ND	2.7	ND	ND	ND
Calcium	250.0	250.0	380.0	1,200.0	300.0	370.0	ND	1,800.0
Chromium	91.0	110.0	68.0	41.0	91.0	120.0	120.0	13.0
Cobalt	12.0	9.7	24.0	10.0	12.0	11.0	13.0	10.0
Copper	16.0	21.0	22.0	25.0	15.0	23.0	25.0	14.0
Iron	33,000.0	40,000.0	31,000.0	26,000.0	28,000.0	45,000.0	44,000.0	20,000.0
Lead	ND	ND	ND	38.0	13.0 J	ND	ND	ND
Magnesium	8,400.0	7,200.0	8,100.0	7,600.0	6,400.0	6,300.0	10,000.0	5,600.0
Manganese	320.0	300.0	1,100.0	490.0	260.0	250.0	520.0	470.0
Mercury	ND	0.09	0.10	0.08	ND	0.08	0.09	ND
Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	32.0	27.0	32.0	15.0	23.0	34.0	43.0	6.9
Potassium	5,600.0	4,500.0	7,300.0	8,200.0	3,600.0	3,700.0	7,500.0	6,900.0
Selenium	ND	ND	ND	ND	ND	17.0	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	730.0 J	ND	ND	220.0
Strontium	5.7	4.8	ND	4.3	NA	5.4	ND	4.6
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	2,500.0	2,100.0	2,000.0	1,800.0	NA	2,100.0	2,500.0	1,400.0
Vanadium	80.0	89.0	70.0	55.0	59.0	100.0	100.0	41.0
Yttrium	8.4	6.8	14.0	9.2	NA	5.6	22.0	7.2
Zinc	65.0	61.0	95.0	93.0	56.0	57.0	86.0	57.0
Pesticides (ug/kg)								
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)	0	0	0	0	0	0	0	0
PCBs (ug/kg)								
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)	0	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / *DETECTED PARAMETER*	*69-SL*	*55-SL*	*41-SL*	*27-SL*	*70-SL*	*56-SL*	*42-SL*	*28-SL*
Extractable Organic Compounds (ug/kg)								
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	200.0 JN	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	500.0 JN	ND	ND	ND
Eicosene	ND	ND	ND	ND	2,000.0 JN	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	ND	ND	600.0 JN	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / *DETECTED PARAMETER*	*69-SL*	*55-SL*	*41-SL*	*27-SL*	*70-SL*	*56-SL*	*42-SL*	*28-SL*
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	N	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	ND	ND	ND	30,000.0 JN	ND	ND	ND
Total Extractable Organics (ug/kg)	0	200 J	0	0	33,100 J	0	0	0
Purgeable Organic Compounds (ug/kg)								
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)								
TEQ	NA	NA	NA	NA	6.8 J	NA	NA	NA

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER	BOREHOLE ID.	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)						
Aluminum		27,625.00	16	16	42,000.00	14,000.00
Antimony		#DIV/0!	0	16	0.00	0.00
Arsenic		9.43	3	16	18.00	2.60
Barium		120.19	16	16	210.00	54.00
Beryllium		2.64	12	16	4.00	1.00
Cadmium		2.40	2	16	2.70	2.10
Calcium		720.71	14	16	1,800.00	120.00
Chromium		63.88	16	16	120.00	13.00
Cobalt		10.75	16	16	24.00	6.60
Copper		18.40	16	16	32.00	5.30
Iron		28,937.50	16	16	45,000.00	13,000.00
Lead		27.80	5	16	39.00	13.00
Magnesium		6,256.25	16	16	10,000.00	2,300.00
Manganese		375.00	16	16	1,100.00	140.00
Mercury		0.11	12	16	0.30	0.06
Molybdenum		#DIV/0!	0	16	0.00	0.00
Nickel		20.03	16	16	43.00	6.90
Potassium		5,150.00	16	16	9,000.00	1,100.00
Selenium		17.00	1	16	17.00	17.00
Silver		#DIV/0!	0	16	0.00	0.00
Sodium		570.00	3	16	760.00	220.00
Strontium		5.56	12	16	17.00	2.50
Tellurium		#DIV/0!	0	16	0.00	0.00
Tin		#DIV/0!	0	16	0.00	0.00
Titanium		1,788.57	14	16	2,500.00	940.00
Vanadium		63.56	16	16	100.00	28.00
Yttrium		8.66	14	16	22.00	4.40
Zinc		63.94	16	16	95.00	33.00
Pesticides (ug/kg)						
4,4'-DDD		#DIV/0!	0	16	0.00	0.00
Alpha-chlordane/2		#DIV/0!	0	16	0.00	0.00
Gamma-chlordane/2		#DIV/0!	0	16	0.00	0.00
OP-DDE		#DIV/0!	0	16	0.00	0.00
Trans-nonachlor/2		#DIV/0!	0	16	0.00	0.00
Total Pesticides (ug/kg)						
PCBs (ug/kg)						
PCB-1248		#DIV/0!	0	16	0.00	0.00
PCB-1254		#DIV/0!	0	16	0.00	0.00
Total PCBs (ug/kg)						

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / DETECTED PARAMETER	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)					
(3- and/or 4-) Methylphenol	#DIV/0!	0	16	0.00	0.00
(Diethylmethyl) Phenol	#DIV/0!	0	16	0.00	0.00
(Dimethylethyl) Methylphenol	#DIV/0!	0	16	0.00	0.00
(Dimethylethyl) Phenol	#DIV/0!	0	16	0.00	0.00
(Methylethyl) Methyl Ester	#DIV/0!	0	16	0.00	0.00
1,2,4-Trichlorobenzene	#DIV/0!	0	16	0.00	0.00
1-Methylnaphthalene	#DIV/0!	0	16	0.00	0.00
2-Chloronaphthalene	#DIV/0!	0	16	0.00	0.00
2-Methylnaphthalene	#DIV/0!	0	16	0.00	0.00
4-Chloro-3-Methylphenol	#DIV/0!	0	16	0.00	0.00
Bicyclohexylphenyl (2 isomers)	#DIV/0!	0	16	0.00	0.00
Bis (2-Ethylhexyl) Phthalate	2,200.00	1	16	2,200.00	2,200.00
Bis (Dimethylethyl) Methylphenol	300.00	1	16	300.00	300.00
Chlorophenoxypropanol	#DIV/0!	0	16	0.00	0.00
Chrysene	#DIV/0!	0	16	0.00	0.00
Cyclohexyldienebisbenzene	#DIV/0!	0	16	0.00	0.00
Cyclopropazulene	#DIV/0!	0	16	0.00	0.00
Decahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	16	0.00	0.00
Decahydrotetramethylmethanoazulene	#DIV/0!	0	16	0.00	0.00
Di-N-Octylphthalate	#DIV/0!	0	16	0.00	0.00
Diethylbenzene (2 isomers)	#DIV/0!	0	16	0.00	0.00
Dihydrodimethylindene	#DIV/0!	0	16	0.00	0.00
Diisocyanatomethylbenzene	#DIV/0!	0	16	0.00	0.00
Dimethoxy (propenyl) Phenol	200.00	1	16	200.00	200.00
Dimethoxyphenol	#DIV/0!	0	16	0.00	0.00
Dimethyl (Propenyl) Phenol	90.00	1	16	90.00	90.00
Dimethylethylphenol	#DIV/0!	0	16	0.00	0.00
Dimethylnaphthalene (2 isomers)	#DIV/0!	0	16	0.00	0.00
Dimethylphenol (not 2,4)	#DIV/0!	0	16	0.00	0.00
Docosanoic Acid	500.00	1	16	500.00	500.00
Eicosene	2,000.00	1	16	2,000.00	2,000.00
Ethenylnaphthalene	#DIV/0!	0	16	0.00	0.00
Ethyldimethylbenzene (2 isomers)	#DIV/0!	0	16	0.00	0.00
Ethylmethylbenzenesulfonamide	#DIV/0!	0	16	0.00	0.00
Hexadecanoic Acid	600.00	1	16	600.00	600.00
Hydroxyphenylpropanoic Acid	80.00	1	16	80.00	80.00
Lupenone	#DIV/0!	0	16	0.00	0.00
Methyl (Propenyl) Benzene	#DIV/0!	0	16	0.00	0.00
Methylbenzenesulfonamide	#DIV/0!	0	16	0.00	0.00
Methylbenzenesulfonamide (2 isomers)	#DIV/0!	0	16	0.00	0.00
Methylheptadecanoic acid, methyl ester	#DIV/0!	0	16	0.00	0.00
Methylpentadecanoic acid, methyl ester	#DIV/0!	0	16	0.00	0.00
Methylpropylbenzene (2 isomers)	#DIV/0!	0	16	0.00	0.00
Methylpyrrolidinone	#DIV/0!	0	16	0.00	0.00
Naphthalene	#DIV/0!	0	16	0.00	0.00
Nonylphenol (2 isomers)	#DIV/0!	0	16	0.00	0.00
Octadecanal	#DIV/0!	0	16	0.00	0.00
Octahydromethanoindenobisoxirene	#DIV/0!	0	16	0.00	0.00

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 0-1 FEET -SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / DETECTED PARAMETER	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Oxybisbenzene	#DIV/0!	0	16	0.00	0.00
Petroleum Product	#DIV/0!	0	16	0.00	0.00
Phenol	250.00	1	16	250.00	250.00
Phenoxybiphenyl	#DIV/0!	0	16	0.00	0.00
Phenylbicyclohexyl	#DIV/0!	0	16	0.00	0.00
Phenylbixylohexyl (3 isomers)	#DIV/0!	0	16	0.00	0.00
Phenylterphenyl	#DIV/0!	0	16	0.00	0.00
Phosphoric Acid, Ethylhexyldiphenyl Ester	#DIV/0!	0	16	0.00	0.00
Phosphoric Acid, Tris (methylphenyl) Ester	300.00	1	16	300.00	300.00
Phthalic Acid	#DIV/0!	0	16	0.00	0.00
Phthalic Anhydride	#DIV/0!	0	16	0.00	0.00
Quaterphenyl	#DIV/0!	0	16	0.00	0.00
Taraxerol	#DIV/0!	0	16	0.00	0.00
Terphenyl	#DIV/0!	0	16	0.00	0.00
Terphenyl (2 isomers)	#DIV/0!	0	16	0.00	0.00
Terphenyl Phenozybiphenyl (2 isomers)	#DIV/0!	0	16	0.00	0.00
Tetradecadiene	#DIV/0!	0	16	0.00	0.00
Tetradecanoic Acid	#DIV/0!	0	16	0.00	0.00
Tetrahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	16	0.00	0.00
Tetrahydromethylnaphthalene	#DIV/0!	0	16	0.00	0.00
Tetramethylbenzne (2 isomers)	#DIV/0!	0	16	0.00	0.00
Tocopherol	#DIV/0!	0	16	0.00	0.00
Trimethylphenyldihydroindene	#DIV/0!	0	16	0.00	0.00
Unidentified Compound	30,000.00	1	16	30,000.00	30,000.00
Total Extractable Organics (ug/kg)					
Purgeable Organic Compounds (ug/kg)					
Methylene Chloride	#DIV/0!	0	16	0.00	0.00
(m- and/or p-) Xylene	#DIV/0!	0	16	0.00	0.00
o-Xylene	#DIV/0!	0	16	0.00	0.00
Ethylmethylbenzene	#DIV/0!	0	16	0.00	0.00
Total Purgeable Organics (ug/kg)					
Dioxin/Furan Compounds (ug/kg)					
TEQ	4.4	2	16	6.8	1.9

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 2 - 3 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER	*BOREHOLE ID.*	*17-SL*	*18-SL*	*33-SL*	*19-SL*	*34-SL*	*20-SL*	*35-SL*	*21-SL*
Metals (mg/kg)									
Aluminum		30,000.0	26,000.0	18,000.0	15,000.0	17,000.0	38,000.0	22,000.0	21,000.0
Antimony		ND	ND	ND	ND	ND	ND	ND	ND
Arsenic		ND	ND	ND	ND	22.0	39.0	35.0	87.0
Barium		120.0	120.0	130.0	100.0	140.0	310.0	160.0	140.0
Beryllium		1.8	1.6	ND	ND	1.8	3.6	2.7	1.8
Cadmium		ND	ND	ND	ND	ND	ND	ND	ND
Calcium		1,300.0	690.0	1,600.0	1,400.0	950.0	410.0	450.0	640.0
Chromium		50.0	32.0	35.0	31.0	34.0	120.0	58.0	8.6
Cobalt		11.0	9.6	11.0	8.8	11.0	9.3	11.0	6.8
Copper		20.0	14.0	26.0	19.0	18.0	30.0	8.5	3.6
Iron		29,000.0	26,000.0	26,000.0	21,000.0	25,000.0	36,000.0	25,000.0	22,000.0
Lead		ND	ND	37.0	ND	26.0	ND	ND	24.0
Magnesium		7,200.0	5,400.0	7,000.0	6,700.0	5,800.0	15,000.0	5,800.0	6,600.0
Manganese		580.0	610.0	680.0	420.0	620.0	410.0	540.0	580.0
Mercury		0.06	ND	0.10	ND	0.10	ND	0.08	0.07
Molybdenum		ND	ND	ND	ND	ND	ND	ND	ND
Nickel		20.0	8.0	10.0	16.0	12.0	27.0	20.0	ND
Potassium		6,800.0	6,000.0	7,700.0	7,700.0	5,500.0	10,000.0	5,700.0	8,400.0
Selenium		ND	ND	ND	ND	ND	ND	ND	ND
Silver		ND	ND	ND	ND	ND	ND	ND	ND
Sodium		ND	ND	ND	ND	ND	620.0	430.0	ND
Strontium		4.3	3.2	4.4	3.3	4.2	ND	ND	ND
Tellurium		ND	ND	ND	ND	ND	ND	ND	ND
Tin		ND	ND	ND	ND	ND	ND	ND	ND
Titanium		1,800.0	1,600.0	1,700.0	1,600.0	1,700.0	3,400.0	1,700.0	2,100.0
Vanadium		67.0	56.0	60.0	45.0	60.0	84.0	63.0	58.0
Yttrium		12.0	9.2	10.0	7.4	11.0	22.0	18.0	5.8
Zinc		57.0	58.0	67.0	49.0	68.0	82.0	62.0	83.0
Pesticides (ug/kg)									
4,4'-DDD		ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2		ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2		ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE		ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2		ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)		0	0	0	0	0	0	0	0
PCBs (ug/kg)									
PCB-1248		ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254		ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)		0	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*17-SL*	*18-SL*	*33-SL*	*19-SL*	*34-SL*	*20-SL*	*35-SL*	*21-SL*
DETECTED PARAMETER								
Extractable Organic Compounds (ug/kg)								
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	1,000.0	1,600.0	ND	3,700.0	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	100.0 JN	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	200.0 JN	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*17-SL*	*18-SL*	*33-SL*	*19-SL*	*34-SL*	*20-SL*	*35-SL*	*21-SL*
DETECTED PARAMETER								
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	ND	ND	ND	N	ND	ND	ND
Phenol	ND	ND	140.0 J	ND	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	200.0 JN	ND
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	ND	ND	1,000.0 J	ND	ND	ND	ND
Total Extractable Organics (ug/kg)	0	1,200	1,840	1,000	3,700	0	200	0
Purgeable Organic Compounds (ug/kg)								
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	13.0 J	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (ug/kg)	0	13	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)								
TEQ	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*36-SL*	*22-SL*	*37-SL*	*23-SL*	*38-SL*	*24-SL*	*39-SL*
DETECTED PARAMETER							
Metals (mg/kg)							
Aluminum	21,000.0	40,000.0	7,800.0	19,000.0	6,000.0	23,000.0	35,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	36.0	73.0	ND	ND	ND	ND
Barium	56.0	250.0	48.0	55.0	63.0	320.0	400.0
Beryllium	1.3	5.0	2.6	2.2	1.5	ND	5.3
Cadmium	ND	ND	ND	ND	ND	ND	ND
Calcium	260.0	ND	270.0	150.0	ND	ND	ND
Chromium	9.1	34.0	2.3	13.0	6.0	17.0	16.0
Cobalt	19.0	22.0	3.8	4.7	3.2	ND	15.0
Copper	3.7	24.0	ND	5.9	1.9	10.0	8.7
Iron	16,000.0	65,000.0	16,000.0	14,000.0	7,800.0	31,000.0	29,000.0
Lead	18.0	ND	ND	ND	12.0	ND	ND
Magnesium	1,500.0	15,000.0	420.0	3,000.0	1,200.0	4,800.0	8,200.0
Manganese	780.0	2,300.0	2,400.0	300.0	630.0	200.0	740.0
Mercury	0.09	0.06	0.13	ND	0.06	0.20	0.09
Molybdenum	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	14.0	ND	8.1	6.9	ND	14.0
Potassium	2,000.0	17,000.0	520.0	3,200.0	2,100.0	5,900.0	9,400.0
Selenium	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND
Strontium	2.2	ND	ND	ND	ND	ND	ND
Tellurium	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND
Titanium	680.0	4,100.0	45.0	900.0	520.0	1,900.0	3,000.0
Vanadium	48.0	160.0	17.0	22.0	11.0	64.0	69.0
Yttrium	8.4	21.0	6.3	12.0	5.8	17.0	11.0
Zinc	26.0	170.0	27.0	42.0	26.0	48.0	84.0
Pesticides (ug/kg)							
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)	0	0	0	0	0	0	0
PCBs (ug/kg)							
PCB-1248	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / *DETECTED PARAMETER*	*36-SL*	*22-SL*	*37-SL*	*23-SL*	*38-SL*	*24-SL*	*39-SL*
Extractable Organic Compounds (ug/kg)							
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	1,300.0	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID.	*36-SL*	*22-SL*	*37-SL*	*23-SL*	*38-SL*	*24-SL*	*39-SL*
DETECTED PARAMETER							
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	ND	ND	ND	ND	N	ND
Phenol	ND	ND	ND	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	ND	ND	ND	ND	ND	ND
Total Extractable Organics (ug/kg)	0	0	0	1,300	0	0	0
Purgeable Organic Compounds (ug/kg)							
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0
Dioxin/Furan Compounds (ng/kg)							
TEQ	NA	NA	NA	NA	NA	NA	NA

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER	BOREHOLE ID.	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)						
Aluminum		22,586.67	15	15	40,000.00	6,000.00
Antimony		#DIV/0!	0	15	0.00	0.00
Arsenic		48.67	6	15	87.00	22.00
Barium		160.80	15	15	400.00	48.00
Beryllium		2.60	12	15	5.30	1.30
Cadmium		#DIV/0!	0	15	0.00	0.00
Calcium		738.18	11	15	1,600.00	150.00
Chromium		31.07	15	15	120.00	2.30
Cobalt		10.44	14	15	22.00	3.20
Copper		13.81	14	15	30.00	1.90
Iron		25,920.00	15	15	65,000.00	7,800.00
Lead		23.40	5	15	37.00	12.00
Magnesium		6,241.33	15	15	15,000.00	420.00
Manganese		786.00	15	15	2,400.00	200.00
Mercury		0.09	11	15	0.20	0.06
Molybdenum		#DIV/0!	0	15	0.00	0.00
Nickel		14.18	11	15	27.00	6.90
Potassium		6,528.00	15	15	17,000.00	520.00
Selenium		#DIV/0!	0	15	0.00	0.00
Silver		#DIV/0!	0	15	0.00	0.00
Sodium		525.00	2	15	620.00	430.00
Strontium		3.60	6	15	4.40	2.20
Tellurium		#DIV/0!	0	15	0.00	0.00
Tin		#DIV/0!	0	15	0.00	0.00
Titanium		1,783.00	15	15	4,100.00	45.00
Vanadium		58.93	15	15	160.00	11.00
Yttrium		11.79	15	15	22.00	5.80
Zinc		63.27	15	15	170.00	26.00
Pesticides (ug/kg)						
4,4'-DDD		#DIV/0!	0	15	0.00	0.00
Alpha-chlordane/2		#DIV/0!	0	15	0.00	0.00
Gamma-chlordane/2		#DIV/0!	0	15	0.00	0.00
OP-DDE		#DIV/0!	0	15	0.00	0.00
Trans-nonachlor/2		#DIV/0!	0	15	0.00	0.00
Total Pesticides (ug/kg)						
PCBs (ug/kg)						
PCB-1248		#DIV/0!	0	15	0.00	0.00
PCB-1254		#DIV/0!	0	15	0.00	0.00
Total PCBs (ug/kg)						

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE ID.	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)					
(3- and/or 4-) Methylphenol	#DIV/0!	0	15	0.00	0.00
(Diethylmethyl) Phenol	#DIV/0!	0	15	0.00	0.00
(Dimethylethyl) Methylphenol	#DIV/0!	0	15	0.00	0.00
(Dimethylethyl) Phenol	#DIV/0!	0	15	0.00	0.00
(Methylethyl) Methyl Ester	#DIV/0!	0	15	0.00	0.00
1,2,4-Trichlorobenzene	#DIV/0!	0	15	0.00	0.00
1-Methylnaphthalene	#DIV/0!	0	15	0.00	0.00
2-Chloronaphthalene	#DIV/0!	0	15	0.00	0.00
2-Methylnaphthalene	#DIV/0!	0	15	0.00	0.00
4-Chloro-3-Methylphenol	#DIV/0!	0	15	0.00	0.00
Bicyclohexylphenyl (2 isomers)	#DIV/0!	0	15	0.00	0.00
Bis (2-Ethylhexyl) Phthalate	1,900.00	4	15	3,700.00	1,000.00
Bis (Dimethylethyl) Methylphenol	100.00	1	15	100.00	100.00
Chlorophenoxypropanol	#DIV/0!	0	15	0.00	0.00
Chrysene	#DIV/0!	0	15	0.00	0.00
Cyclohexyldienebisbenzene	#DIV/0!	0	15	0.00	0.00
Cyclopropazulene	#DIV/0!	0	15	0.00	0.00
Decahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	15	0.00	0.00
Decahydrotetramethylmethanoazulene	#DIV/0!	0	15	0.00	0.00
Di-N-Octylphthalate	#DIV/0!	0	15	0.00	0.00
Diethylbenzene (2 isomers)	#DIV/0!	0	15	0.00	0.00
Dihydrodimethylindene	#DIV/0!	0	15	0.00	0.00
Diisocyanatomethylbenzene	#DIV/0!	0	15	0.00	0.00
Dimethoxy (propenyl) Phenol	#DIV/0!	0	15	0.00	0.00
Dimethoxyphenol	#DIV/0!	0	15	0.00	0.00
Dimethyl (Propenyl) Phenol	#DIV/0!	0	15	0.00	0.00
Dimethylethylphenol	#DIV/0!	0	15	0.00	0.00
Dimethylnaphthalene (2 isomers)	#DIV/0!	0	15	0.00	0.00
Dimethylphenol (not 2,4)	#DIV/0!	0	15	0.00	0.00
Docosanoic Acid	#DIV/0!	0	15	0.00	0.00
Eicosene	#DIV/0!	0	15	0.00	0.00
Ethenylnaphthalene	#DIV/0!	0	15	0.00	0.00
Ethyldimethylbenzene (2 isomers)	#DIV/0!	0	15	0.00	0.00
Ethylmethylbenzenesulfonamide	#DIV/0!	0	15	0.00	0.00
Hexadecanoic Acid	200.00	1	15	200.00	200.00
Hydroxyphenylpropanoic Acid	#DIV/0!	0	15	0.00	0.00
Lupenone	#DIV/0!	0	15	0.00	0.00
Methyl (Propenyl) Benzene	#DIV/0!	0	15	0.00	0.00
Methylbenzenesulfonamide	#DIV/0!	0	15	0.00	0.00
Methylbenzenesulfonamide (2 isomers)	#DIV/0!	0	15	0.00	0.00
Methylheptadecanoic acid, methyl ester	#DIV/0!	0	15	0.00	0.00
Methylpentadecanoic acid, methyl ester	#DIV/0!	0	15	0.00	0.00
Methylpropylbenzene (2 isomers)	#DIV/0!	0	15	0.00	0.00
Methylpyrrolidinone	#DIV/0!	0	15	0.00	0.00
Naphthalene	#DIV/0!	0	15	0.00	0.00
Nonylphenol (2 isomers)	#DIV/0!	0	15	0.00	0.00
Octadecanal	#DIV/0!	0	15	0.00	0.00
Octahydromethanoindenobisoxirene	#DIV/0!	0	15	0.00	0.00

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 2-3 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE ID. / *DETECTED PARAMETER*	*AVER.*	*FREQ. OF DETECT.*	*NO. OF SAMPLES*	*MAX.*	*MIN.*
Oxybisbenzene	#DIV/0!	0	15	0.00	0.00
Petroleum Product	#DIV/0!	0	15	0.00	0.00
Phenol	140.00	1	15	140.00	140.00
Phenoxybiphenyl	#DIV/0!	0	15	0.00	0.00
Phenylbicyclohexyl	200.00	1	15	200.00	200.00
Phenylbixylohexyl (3 isomers)	#DIV/0!	0	15	0.00	0.00
Phenylterphenyl	#DIV/0!	0	15	0.00	0.00
Phosphoric Acid, Ethylhexyldiphenyl Ester	#DIV/0!	0	15	0.00	0.00
Phosphoric Acid, Tris (methylphenyl) Ester	#DIV/0!	0	15	0.00	0.00
Phthalic Acid	#DIV/0!	0	15	0.00	0.00
Phthalic Anhydride	#DIV/0!	0	15	0.00	0.00
Quaterphenyl	#DIV/0!	0	15	0.00	0.00
Taraxerol	#DIV/0!	0	15	0.00	0.00
Terphenyl	#DIV/0!	0	15	0.00	0.00
Terphenyl (2 isomers)	#DIV/0!	0	15	0.00	0.00
Terphenyl Phenozybiphenyl (2 isomers)	#DIV/0!	0	15	0.00	0.00
Tetradecadiene	#DIV/0!	0	15	0.00	0.00
Tetradecanoic Acid	#DIV/0!	0	15	0.00	0.00
Tetrahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	15	0.00	0.00
Tetrahydromethylnaphthalene	#DIV/0!	0	15	0.00	0.00
Tetramethylbenzne (2 isomers)	#DIV/0!	0	15	0.00	0.00
Tocopherol	#DIV/0!	0	15	0.00	0.00
Trimethylphenyldihydroindene	#DIV/0!	0	15	0.00	0.00
Unidentified Compound	1,000.00	1	15	1,000.00	1,000.00
Total Extractable Organics (ug/kg)					
Purgeable Organic Compounds (ug/kg)					
Methylene Chloride	#DIV/0!	0	15	0.00	0.00
(m- and/or p-) Xylene	13.00	1	15	13.00	13.00
o-Xylene	#DIV/0!	0	15	0.00	0.00
Ethylmethylbenzene	#DIV/0!	0	15	0.00	0.00
Total Purgeable Organics (ug/kg)					
Dioxin/Furan Compounds (ng/kg)					
TEQ	#DIV/0!	0	15	0.0	0.0

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- TEQ - Toxicity Equivalence Value

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 5 - 6 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	30-SL	16-SL	31-SL	17-SL	3-SL	46-SL	32-SL	18-SL	4-SL
DETECTED PARAMETER									
Metals (mg/kg)									
Aluminum	25,000.0	8,200.0	24,000.0	30,000.0	20,000.0	57,000.0	18,000.0	17,000.0	13,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	ND	ND	ND	17.0	ND	ND
Barium	130.0	48.0	130.0	250.0	24.0	240.0	100.0	75.0	30.0
Beryllium	1.9	ND	2.3	ND	ND	ND	1.5	ND	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	ND	ND	ND	1,100.0	ND	ND	ND	1,100.0	680.0
Chromium	3.5	19.0	38.0	42.0	13.0	22.0	26.0	23.0	12.0
Cobalt	6.4	4.2	11.0	12.0	2.1	12.0	10.0	7.2	3.2
Copper	ND	4.2	8.8	15.0	3.4	8.3	6.0	14.0	5.8
Iron	33,000.0	16,000.0	23,000.0	38,000.0	16,000.0	50,000.0	22,000.0	18,000.0	7,300.0
Lead	ND	29.0	ND	ND	33.0	ND	20.0	36.0	19.0
Magnesium	2,600.0	1,700.0	5,600.0	8,300.0	1,200.0	9,900.0	4,000.0	4,200.0	1,200.0
Manganese	240.0	240.0	1,300.0	400.0	71.0	300.0	450.0	560.0	280.0
Mercury	ND	ND	0.07	ND	0.11	0.10	0.1	0.08	ND
Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	5.8	12.0	17.0	ND	ND	8.8	10.0	ND
Potassium	4,700.0	3,000.0	5,700.0	11,000.0	1,600.0	13,000.0	3,800.0	3,900.0	1,100.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Strontium	ND	ND	ND	4.9	ND	ND	ND	2.2	ND
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	1,600.0	770.0	1,600.0	2,800.0	570.0	3,600.0	1,300.0	1,300.0	300.0
Vanadium	33.0	15.0	50.0	75.0	24.0	91.0	50.0	35.0	12.0
Yttrium	6.8	16.0	12.0	25.0	6.0	12.0	10.0	6.0	3.3
Zinc	60.0	32.0	59.0	99.0	22.0	100.0	44.0	40.0	15.0
Pesticides (ug/kg)									
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	80.0	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)	0	0	0	0	0	0	0	80	0
PCBs (ug/kg)									
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)	0	0	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*30-SL*	*16-SL*	*31-SL*	*17-SL*	*3-SL*	*46-SL*	*32-SL*	*18-SL*	*4-SL*
DETECTED PARAMETER									
Extractable Organic Compounds (ug/kg)									
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	2,000.0	ND	ND	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*30-SL*	*16-SL*	*31-SL*	*17-SL*	*3-SL*	*46-SL*	*32-SL*	*18-SL*	*4-SL*
DETECTED PARAMETER									
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Extractable Organics (ug/kg)	0	0	0	2,000	0	0	0	0	0
Purgeable Organic Compounds (ug/kg)									
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0	0	0

Notes:
- ND - Not Detected

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER	BOREHOLE I.D.	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)						
Aluminum		23,577.8	9	9	57,000.0	8,200.0
Antimony		#DIV/0!	0	9	0.0	0.0
Arsenic		17.0	1	9	17.0	17.0
Barium		114.1	9	9	250.0	24.0
Beryllium		1.9	3	9	2.3	1.5
Cadmium		#DIV/0!	0	9	0.0	0.0
Calcium		960.0	3	9	1,100.0	680.0
Chromium		22.1	9	9	42.0	3.5
Cobalt		7.6	9	9	12.0	2.1
Copper		8.2	8	9	15.0	3.4
Iron		24,811.1	9	9	50,000.0	7,300.0
Lead		27.4	5	9	36.0	19.0
Magnesium		4,300.0	9	9	9,900.0	1,200.0
Manganese		426.8	9	9	1,300.0	71.0
Mercury		0.1	5	9	0.1	0.1
Molybdenum		#DIV/0!	0	9	0.0	0.0
Nickel		10.7	5	9	17.0	5.8
Potassium		5,311.1	9	9	13,000.0	1,100.0
Selenium		#DIV/0!	0	9	0.0	0.0
Silver		#DIV/0!	0	9	0.0	0.0
Sodium		#DIV/0!	0	9	0.0	0.0
Strontium		3.6	2	9	4.9	2.2
Tellurium		#DIV/0!	0	9	0.0	0.0
Tin		#DIV/0!	0	9	0.0	0.0
Titanium		1,537.8	9	9	3,600.0	300.0
Vanadium		42.8	9	9	91.0	12.0
Yttrium		10.8	9	9	25.0	3.3
Zinc		52.3	9	9	100.0	15.0
Pesticides (ug/kg)						
4,4'-DDD		80.0	1	9	80.0	80.0
Alpha-chlordane/2		#DIV/0!	0	9	0.0	0.0
Gamma-chlordane/2		#DIV/0!	0	9	0.0	0.0
OP-DDE		#DIV/0!	0	9	0.0	0.0
Trans-nonachlor/2		#DIV/0!	0	9	0.0	0.0
Total Pesticides (ug/kg)						
PCBs (ug/kg)						
PCB-1248		#DIV/0!	0	9	0.0	0.0
PCB-1254		#DIV/0!	0	9	0.0	0.0
Total PCBs (ug/kg)						

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / *DETECTED PARAMETER*	*AVER.*	*FREQ. OF DETECT.*	*NO. OF SAMPLES*	*MAX.*	*MIN.*
Extractable Organic Compounds (ug/kg)					
(3- and/or 4-) Methylphenol	#DIV/0!	0	9	0.0	0.0
(Diethylmethyl) Phenol	#DIV/0!	0	9	0.0	0.0
(Dimethylethyl) Methylphenol	#DIV/0!	0	9	0.0	0.0
(Dimethylethyl) Phenol	#DIV/0!	0	9	0.0	0.0
(Methylethyl) Methyl Ester	#DIV/0!	0	9	0.0	0.0
1,2,4-Trichlorobenzene	#DIV/0!	0	9	0.0	0.0
1-Methylnaphthalene	#DIV/0!	0	9	0.0	0.0
2-Chloronaphthalene	#DIV/0!	0	9	0.0	0.0
2-Methylnaphthalene	#DIV/0!	0	9	0.0	0.0
4-Chloro-3-Methylphenol	#DIV/0!	0	9	0.0	0.0
Bicyclohexylphenyl (2 isomers)	#DIV/0!	0	9	0.0	0.0
Bis (2-Ethylhexyl) Phthalate	2,000.0	1	9	2,000.0	2,000.0
Bis (Dimethylethyl) Methylphenol	#DIV/0!	0	9	0.0	0.0
Chlorophenoxypropanol	#DIV/0!	0	9	0.0	0.0
Chrysene	#DIV/0!	0	9	0.0	0.0
Cyclohexyldienebisbenzene	#DIV/0!	0	9	0.0	0.0
Cyclopropazulene	#DIV/0!	0	9	0.0	0.0
Decahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	9	0.0	0.0
Decahydrotetramethylmethanoazulene	#DIV/0!	0	9	0.0	0.0
Di-N-Octylphthalate	#DIV/0!	0	9	0.0	0.0
Diethylbenzene (2 isomers)	#DIV/0!	0	9	0.0	0.0
Dihydrodimethylindene	#DIV/0!	0	9	0.0	0.0
Diisocyanatomethylbenzene	#DIV/0!	0	9	0.0	0.0
Dimethoxy (propenyl) Phenol	#DIV/0!	0	9	0.0	0.0
Dimethoxyphenol	#DIV/0!	0	9	0.0	0.0
Dimethyl (Propenyl) Phenol	#DIV/0!	0	9	0.0	0.0
Dimethylethylphenol	#DIV/0!	0	9	0.0	0.0
Dimethylnaphthalene (2 isomers)	#DIV/0!	0	9	0.0	0.0
Dimethylphenol (not 2,4)	#DIV/0!	0	9	0.0	0.0
Docosanoic Acid	#DIV/0!	0	9	0.0	0.0
Eicosene	#DIV/0!	0	9	0.0	0.0
Ethenylnaphthalene	#DIV/0!	0	9	0.0	0.0
Ethyldimethylbenzene (2 isomers)	#DIV/0!	0	9	0.0	0.0
Ethylmethylbenzenesulfonamide	#DIV/0!	0	9	0.0	0.0
Hexadecanoic Acid	#DIV/0!	0	9	0.0	0.0
Hydroxyphenylpropanoic Acid	#DIV/0!	0	9	0.0	0.0
Lupenone	#DIV/0!	0	9	0.0	0.0
Methyl (Propenyl) Benzene	#DIV/0!	0	9	0.0	0.0
Methylbenzenesulfonamide	#DIV/0!	0	9	0.0	0.0
Methylbenzenesulfonamide (2 isomers)	#DIV/0!	0	9	0.0	0.0
Methylheptadecanoic acid, methyl ester	#DIV/0!	0	9	0.0	0.0
Methylpentadecanoic acid, methyl ester	#DIV/0!	0	9	0.0	0.0
Methylpropylbenzene (2 isomers)	#DIV/0!	0	9	0.0	0.0
Methylpyrrolidinone	#DIV/0!	0	9	0.0	0.0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - NORTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Naphthalene	#DIV/0!	0	9	0.0	0.0
Nonylphenol (2 isomers)	#DIV/0!	0	9	0.0	0.0
Octadecanal	#DIV/0!	0	9	0.0	0.0
Octahydromethanoindenobisoxirene	#DIV/0!	0	9	0.0	0.0
Oxybisbenzene	#DIV/0!	0	9	0.0	0.0
Petroleum Product	#DIV/0!	0	9	0.0	0.0
Phenol	#DIV/0!	0	9	0.0	0.0
Phenoxybiphenyl	#DIV/0!	0	9	0.0	0.0
Phenylbicyclohexyl	#DIV/0!	0	9	0.0	0.0
Phenylbixylohexyl (3 isomers)	#DIV/0!	0	9	0.0	0.0
Phenylterphenyl	#DIV/0!	0	9	0.0	0.0
Phosphoric Acid, Ethylhexyldiphenyl Ester	#DIV/0!	0	9	0.0	0.0
Phosphoric Acid, Tris (methylphenyl) Ester	#DIV/0!	0	9	0.0	0.0
Phthalic Acid	#DIV/0!	0	9	0.0	0.0
Phthalic Anhydride	#DIV/0!	0	9	0.0	0.0
Quaterphenyl	#DIV/0!	0	9	0.0	0.0
Taraxerol	#DIV/0!	0	9	0.0	0.0
Terphenyl	#DIV/0!	0	9	0.0	0.0
Terphenyl (2 isomers)	#DIV/0!	0	9	0.0	0.0
Terphenyl Phenozybiphenyl (2 isomers)	#DIV/0!	0	9	0.0	0.0
Tetradecadiene	#DIV/0!	0	9	0.0	0.0
Tetradecanoic Acid	#DIV/0!	0	9	0.0	0.0
Tetrahydrodimethyl (Methylethyl) Naphthalene	#DIV/0!	0	9	0.0	0.0
Tetrahydromethylnaphthalene	#DIV/0!	0	9	0.0	0.0
Tetramethylbenzne (2 isomers)	#DIV/0!	0	9	0.0	0.0
Tocopherol	#DIV/0!	0	9	0.0	0.0
Trimethylphenyldihydroindene	#DIV/0!	0	9	0.0	0.0
Unidentified Compound	#DIV/0!	0	9	0.0	0.0
Total Extractable Organics (ug/kg)					
Purgeable Organic Compounds (ug/kg)					
Methylene Chloride	#DIV/0!	0	9	0.0	0.0
(m- and/or p-) Xylene	#DIV/0!	0	9	0.0	0.0
o-Xylene	#DIV/0!	0	9	0.0	0.0
Ethylmethylbenzene	#DIV/0!	0	9	0.0	0.0
Total Purgeable Organics (ug/kg)					

Notes:
- ND - Not Detected

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / *BOREHOLE I.D.*	*47-SL*	*33-SL*	*19-SL*	*5-SL*	*62-SL*	*48-SL*	*34-SL*	*20-SL*	*6-SL*	*63-SL*	*49-SL*
Metals (mg/kg)											
Aluminum	8,700.0	24,000.0	20,000.0	4,800.0	21,000.0	3,600.0	24,000.0	36,000.0	37,000.0	2,700.0	17,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	39.0	22.0	ND	33.0	ND	30.0	ND	47.0	ND	ND
Barium	29.0	190.0	76.0	27.0	220.0	11.0	140.0	220.0	270.0	29.0	53.0
Beryllium	0.77	1.9	1.1	0.73	2.2	ND	ND	2.8	2.7	0.60	ND
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	ND	240.0	310.0	95.0	120.0	ND	370.0	ND	ND	ND	ND
Chromium	1.3	29.0	63.0	3.9	72.0	1.1	61.0	35.0	13.0	ND	11.0
Cobalt	1.4	13.0	12.0	3.4	11.0	ND	10.0	25.0	10.0	ND	4.4
Copper	ND	7.6	9.0	ND	6.8	ND	9.2	12.0	12.0	ND	3.7
Iron	9,600.0	33,000.0	21,000.0	3,400.0	18,000.0	2,500.0	38,000.0	33,000.0	41,000.0	3,000.0	16,000.0
Lead	16.0	ND	ND	ND	ND	10.0	ND	ND	ND	ND	ND
Magnesium	990.0	6,900.0	6,100.0	220.0	8,000.0	53.0	6,800.0	10,000.0	12,000.0	24.0	1,200.0
Manganese	170.0	500.0	370.0	340.0	630.0	400.0	380.0	860.0	890.0	520.0	410.0
Mercury	ND	0.10	ND	ND	0.11	ND	0.10	0.20	ND	ND	0.10
Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	ND	6.7	28.0	ND	34.0	ND	14.0	ND	ND	ND	ND
Potassium	2,000.0	7,200.0	6,500.0	400.0	5,600.0	ND	6,500.0	10,000.0	14,000.0	ND	720.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Strontium	ND	ND	ND	ND	4.5	ND	ND	ND	ND	ND	ND
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	690.0	2,200.0	1,400.0	120.0	1,600.0	19.0	2,400.0	3,100.0	3,700.0	8.8	580.0
Vanadium	4.6	98.0	38.0	2.7	35.0	ND	100.0	81.0	93.0	ND	33.0
Yttrium	8.0	15.0	20.0	3.5	16.0	1.6	21.0	15.0	22.0	6.0	6.0
Zinc	49.0	66.0	77.0	12.0	58.0	5.0	65.0	95.0	130.0	4.3	19.0
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)	0	0	0	0	0	0	0	0	0	0	0
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	620.0 J
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)	0	0	0	0	0	0	0	0	0	0	620 J

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	47-SL	33-SL	19-SL	5-SL	62-SL	48-SL	34-SL	20-SL	6-SL	63-SL	49-SL
DETECTED PARAMETER											
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,000.0 JN
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	370.0 J
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,000.0 JN
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,600.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,100.0 J
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6,400.0
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7,000.0 JN
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000.0 JN
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20,000.0 JN
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000.0 JN
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40,000.0 JN
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,000.0 JN
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,000.0 JN
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,000.0 JN
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	890.0 J
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*47-SL*	*33-SL*	*19-SL*	*5-SL*	*62-SL*	*48-SL*	*34-SL*	*20-SL*	*6-SL*	*63-SL*	*49-SL*
DETECTED PARAMETER											
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20,000.0 JN
Petroleum Product	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	400.0 JN
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,000.0 JN
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Extractable Organics (ug/kg)	0	0	0	0	0	0	0	0	0	0	117,760 J
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,700 J
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,000 J
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000 JN
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0	0	0	0	18,700 J

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*35-SL*	*21-SL*	*7-SL*	*64-SL*	*50-SL*	*36-SL*	*22-SL*	*8-SL*	*85-SL*	*65-SL*	*51-SL*
DETECTED PARAMETER											
Metals (mg/kg)											
Aluminum	22,000.0	8,800.0	6,300.0	19,000.0	8,400.0	31,000.0	12,000.0	23,000.0	30,000.0	42,000.0	38,000.0
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	28.0	31.0	34.0	ND	ND	ND	ND	23.0
Barium	34.0	28.0	44.0	90.0	36.0	320.0	120.0	170.0	190.0	240.0	230.0
Beryllium	1.2	0.71	1.0	ND	0.61	3.2	2.9	ND	5.6	ND	4.3
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	100.0	80.0	ND	ND	ND	550.0	ND	1,600.0	ND	ND	ND
Chromium	12.0	1.1	1.5	19.0	1.9	18.0	2.2	46.0	63.0	34.0	27.0
Cobalt	7.1	1.0	1.8	9.0	3.8	11.0	2.2	13.0	12.0	22.0	18.0
Copper	3.8	ND	ND	4.0	1.2	8.5	ND	25.0	10.0	8.7	8.1
Iron	16,000.0	3,800.0	3,600.0	29,000.0	7,400.0	38,000.0	20,000.0	29,000.0	25,000.0	53,000.0	51,000.0
Lead	ND	13.0	ND	ND	11.0	ND	ND	ND	ND	ND	ND
Magnesium	1,200.0	560.0	95.0	4,600.0	810.0	12,000.0	480.0	7,800.0	10,000.0	18,000.0	18,000.0
Manganese	460.0	340.0	1,100.0	220.0	640.0	520.0	6,300.0	1,100.0	670.0	990.0	760.0
Mercury	0.17	0.06	ND	ND	ND	0.22	0.08	ND	ND	0.11	0.1
Molybdenum	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	5.2	ND	ND	ND	ND	ND	5.0	27.0	30.0	ND	ND
Potassium	1,000.0	720.0	ND	4,300.0	680.0	15,000.0	480.0	10,000.0	9,000.0	20,000.0	18,000.0
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Strontium	ND	ND	ND	ND	ND	ND	ND	4.0	ND	ND	6.5
Tellurium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Titanium	460.0	160.0	24.0	1,800.0	180.0	3,800.0	130.0	2,500.0	2,500.0	4,800.0	5,400.0
Vanadium	31.0	9.6	7.2	85.0	13.0	120.0	14.0	58.0	50.0	200.0	160.0
Yttrium	9.6	1.7	2.5	10.0	1.6	30.0	4.5	10.0	23.0	18.0	29.0
Zinc	23.0	6.6	11.0	40.0	14.0	98.0	31.0	66.0	81.0	180.0	120.0
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OP-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (ug/kg)	0	0	0	0	0	0	0	0	0	0	0
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (ug/kg)	0	0	0	0	0	0	0	0	0	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	35-SL	21-SL	7-SL	64-SL	50-SL	36-SL	22-SL	8-SL	85-SL	65-SL	51-SL
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	200.0 JN	ND	ND	ND	ND
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	910.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	90.0 JN
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopropazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Docosanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eicosene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lupenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*35-SL*	*21-SL*	*7-SL*	*64-SL*	*50-SL*	*36-SL*	*22-SL*	*8-SL*	*85-SL*	*65-SL*	*51-SL*
DETECTED PARAMETER											
Octadecanal	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxybisbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Product	ND	ND	ND	ND	ND	ND	ND	N	ND	ND	ND
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenylterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Quaterphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Taraxerol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tocopherol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compound	ND	ND	ND	ND	ND	ND	ND	800.0 J	ND	ND	ND
Total Extractable Organics (ug/kg)	910	0	0	0	0	0	200 J	800 J	0	0	90 J
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0	0	0	0	0

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	37-SL	23-SL	9-SL	38-SL	24-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)										
Aluminum	5,100.0	15,000.0	23,000.0	12,000.0	24,000.0	19,200.0	27	27	42,000.0	2,700.0
Antimony	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Arsenic	ND	ND	ND	ND	ND	31.9	9	27	47.0	22.0
Barium	25.0	64.0	120.0	47.0	380.0	126.0	27	27	380.0	11.0
Beryllium	2.6	1.8	1.9	3.2	2.3	2.1	21	27	5.6	0.6
Cadmium	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Calcium	ND	ND	980.0	ND	ND	444.5	10	27	1,600.0	80.0
Chromium	ND	9.7	50.0	4.6	11.0	23.7	25	27	72.0	1.1
Cobalt	ND	15.0	11.0	ND	15.0	10.1	23	27	25.0	1.0
Copper	ND	ND	19.0	ND	16.0	9.7	17	27	25.0	1.2
Iron	8,900.0	8,200.0	23,000.0	6,100.0	32,000.0	21,203.7	27	27	53,000.0	2,500.0
Lead	ND	26.0	ND	20.0	ND	16.0	6	27	26.0	10.0
Magnesium	92.0	1,600.0	7,900.0	590.0	5,800.0	5,252.4	27	27	18,000.0	24.0
Manganese	3,400.0	2,100.0	450.0	2,200.0	600.0	1,011.9	27	27	6,300.0	170.0
Mercury	ND	0.17	ND	ND	0.09	0.1	13	27	0.2	0.1
Molybdenum	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Nickel	ND	19.0	20.0	6.2	ND	17.7	11	27	34.0	5.0
Potassium	260.0	1,700.0	7,100.0	890.0	6,900.0	6,206.3	24	27	20,000.0	260.0
Selenium	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Silver	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Sodium	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Strontium	ND	ND	3.4	2.8	ND	4.2	5	27	6.5	2.8
Tellurium	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Tin	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Titanium	10.0	390.0	1,800.0	200.0	1,900.0	1,550.8	27	27	5,400.0	8.8
Vanadium	3.6	15.0	53.0	7.9	62.0	55.0	25	27	200.0	2.7
Yttrium	3.3	5.7	15.0	9.8	25.0	12.3	27	27	30.0	1.6
Zinc	10.0	43.0	57.0	19.0	57.0	53.2	27	27	180.0	4.3
Pesticides (ug/kg)										
4,4'-DDD	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Alpha-chlordane/2	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Gamma-chlordane/2	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
OP-DDE	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Trans-nonachlor/2	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Total Pesticides (ug/kg)	0	0	0	0	0					
PCBs (ug/kg)										
PCB-1248	ND	ND	ND	ND	ND	620.0	1	27	620.0	620.0
PCB-1254	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Total PCBs (ug/kg)	0	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	37-SL	23-SL	9-SL	38-SL	24-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)										
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	3,000.0	1	27	3,000.0	3,000.0
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	200.0	1	27	200.0	200.0
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	370.0	1	27	370.0	370.0
1-Methylnaphthalene	ND	ND	ND	ND	ND	2,000.0	1	27	2,000.0	2,000.0
2-Chloronaphthalene	ND	ND	ND	ND	ND	2,600.0	1	27	2,600.0	2,600.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	1,100.0	1	27	1,100.0	1,100.0
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	3,655.0	2	27	6,400.0	910.0
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	90.0	1	27	90.0	90.0
Chlorophenoxypropanol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Chrysene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Cyclopropazulene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Di-N-Octylphthalate	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	7,000.0	1	27	7,000.0	7,000.0
Dihydrodimethylindene	ND	ND	ND	ND	ND	1,000.0	1	27	1,000.0	1,000.0
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Dimethoxyphenol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Dimethylethylphenol	ND	ND	ND	ND	ND	20,000.0	1	27	20,000.0	20,000.0
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	1,000.0	1	27	1,000.0	1,000.0
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Docosanoic Acid	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Eicosene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Ethenylnaphthalene	ND	ND	ND	ND	ND	40,000.0	1	27	40,000.0	40,000.0
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	2,000.0	1	27	2,000.0	2,000.0
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Hexadecanoic Acid	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Lupenone	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	4,000.0	1	27	4,000.0	4,000.0
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	3,000.0	1	27	3,000.0	3,000.0
Methylpyrrolidinone	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Naphthalene	ND	ND	ND	ND	ND	890.0	1	27	890.0	890.0
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - CENTRAL REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	37-SL	23-SL	9-SL	38-SL	24-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Octadecanal	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Oxybisbenzene	ND	ND	ND	ND	ND	20,000.0	1	27	20,000.0	20,000.0
Petroleum Product	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phenol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phenoxybiphenyl	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phenylbicyclohexyl	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phenylterphenyl	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phthalic Acid	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Phthalic Anhydride	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Quaterphenyl	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Taraxerol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Terphenyl	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Tetradecadiene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Tetradecanoic Acid	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	400.0	1	27	400.0	400.0
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	3,000.0	1	27	3,000.0	3,000.0
Tocopherol	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
Unidentified Compound	ND	ND	ND	ND	ND	800.0	1	27	800.0	800.0
Total Extractable Organics (ug/kg)	0	0	0	0	0	#DIV/0!			118,850	
Purgeable Organic Compounds (ug/kg)										
Methylene Chloride	ND	ND	ND	ND	ND	#DIV/0!	0	27	0.0	0.0
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	5,700.0	1	27	5,700.0	5,700.0
o-Xylene	ND	ND	ND	ND	ND	3,000.0	1	27	3,000.0	3,000.0
Ethylmethylbenzene	ND	ND	ND	ND	ND	10,000.0	1	27	10,000.0	10,000.0
Total Purgeable Organics (ug/kg)	0	0	0	0	0				18,700	

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	39-SL	25-SL	40-SL	26-SL	41-SL	27-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)											
Aluminum	26,000.0	34,000.0	33,000.0	34,000.0	39,000.0	68,000.0	39,000.0	6	6	68,000.0	26,000.0
Antimony	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Arsenic	ND	ND	ND	15.0	ND	ND	15.0	1	6	15.0	15.0
Barium	390.0	240.0	280.0	140.0	220.0	330.0	266.7	6	6	390.0	140.0
Beryllium	3.6	3.6	6.0	3.9	5.6	6.1	4.8	6	6	6.1	3.6
Cadmium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Calcium	ND	ND	ND	ND	270.0	450.0	360.0	2	6	450.0	270.0
Chromium	16.0	82.0	97.0	110.0	100.0	210.0	102.5	6	6	210.0	16.0
Cobalt	14.0	15.0	23.0	14.0	29.0	21.0	19.3	6	6	29.0	14.0
Copper	11.0	16.0	30.0	24.0	74.0	69.0	37.3	6	6	74.0	11.0
Iron	34,000.0	38,000.0	37,000.0	41,000.0	45,000.0	58,000.0	42,166.7	6	6	58,000.0	34,000.0
Lead	ND	ND	18.0	ND	ND	ND	18.0	1	6	18.0	18.0
Magnesium	9,000.0	13,000.0	14,000.0	9,500.0	17,000.0	28,000.0	15,083.3	6	6	28,000.0	9,000.0
Manganese	710.0	620.0	780.0	530.0	780.0	560.0	663.3	6	6	780.0	530.0
Mercury	0.09	0.14	0.08	0.09	ND	0.08	0.1	5	6	0.1	0.1
Molybdenum	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nickel	11.0	35.0	33.0	31.0	25.0	67.0	33.7	6	6	67.0	11.0
Potassium	12,000.0	11,000.0	12,000.0	7,900.0	12,000.0	19,000.0	12,316.7	6	6	19,000.0	7,900.0
Selenium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Silver	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Sodium	ND	ND	ND	NA	ND	ND	#DIV/0!	0	6	0.0	0.0
Strontium	5.5	ND	ND	ND	4.4	ND	5.0	2	6	5.5	4.4
Tellurium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tin	ND	ND	ND	ND	ND	18.0	18.0	1	6	18.0	18.0
Titanium	3,200.0	3,000.0	3,200.0	2,200.0	3,500.0	4,900.0	3,333.3	6	6	4,900.0	2,200.0
Vanadium	76.0	81.0	90.0	95.0	120.0	170.0	105.3	6	6	170.0	76.0
Yttrium	7.7	31.0	19.0	19.0	22.0	36.0	22.5	6	6	36.0	7.7
Zinc	76.0	90.0	100.0	75.0	140.0	200.0	113.5	6	6	200.0	75.0
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
OP-DDE	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Pesticides (ug/kg)	0	0	0	0	0	0					
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
PCB-1254	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total PCBs (ug/kg)	0	0	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	39-SL	25-SL	40-SL	26-SL	41-SL	27-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (Dimethylethyl) Methylphenol	ND	ND	300.0 JN	ND	ND	ND	300.0	1	6	300.0	300.0
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Chrysene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclopropazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Docosanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Eicosene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Lupenone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 5-6 FEET - SOUTHERN REGION

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / *DETECTED PARAMETER*	*39-SL*	*25-SL*	*40-SL*	*26-SL*	*41-SL*	*27-SL*	*AVER.*	*FREQ. OF DETECT.*	*NO. OF SAMPLES*	*MAX.*	*MIN.*
Octadecanal	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Oxybisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Petroleum Product	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Quaterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Taraxerol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecadiene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tocopherol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Unidentified Compound	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Extractable Organics (ug/kg)	0	0	300 J	0	0	0					
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
o-Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0					

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 10 - 11 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 10-11 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)											
Aluminum	10,000.0	13,000.0	37,000.0	25,000.0	25,000.0	39,000.0	24,833.3	6	6	39,000.0	10,000.0
Antimony	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Arsenic	ND	ND	ND	65.0	ND	14.0	39.5	2	6	65.0	14.0
Barium	49.0	93.0	220.0	84.0	430.0	130.0	167.7	6	6	430.0	49.0
Beryllium	0.58	1.7	4.4	3.2	2.5	4.6	2.8	6	6	4.6	0.6
Cadmium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Calcium	400.0	100.0	ND	ND	ND	ND	250.0	2	6	400.0	100.0
Chromium	14.0	9.4	70.0	56.0	33.0	130.0	52.1	6	6	130.0	9.4
Cobalt	3.4	2.5	18.0	12.0	20.0	14.0	11.7	6	6	20.0	2.5
Copper	6.8	ND	24.0	9.7	18.0	38.0	19.3	5	6	38.0	6.8
Iron	10,000.0	9,800.0	35,000.0	19,000.0	28,000.0	50,000.0	25,300.0	6	6	50,000.0	9,800.0
Lead	68.0	ND	ND	ND	ND	ND	68.0	1	6	68.0	68.0
Magnesium	1,700.0	2,000.0	12,000.0	6,200.0	8,600.0	8,700.0	6,533.3	6	6	12,000.0	1,700.0
Manganese	400.0	1,300.0	880.0	820.0	760.0	590.0	791.7	6	6	1,300.0	400.0
Mercury	ND	ND	ND	ND	0.08	0.12	0.1	2	6	0.1	0.1
Molybdenum	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nickel	4.5	ND	27.0	21.0	11.0	33.0	19.3	5	6	33.0	4.5
Potassium	2,000.0	2,400.0	11,000.0	5,400.0	8,400.0	7,000.0	6,033.3	6	6	11,000.0	2,000.0
Selenium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Silver	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Sodium	ND	ND	ND	ND	ND	NA	#DIV/0!	0	6	0.0	0.0
Strontium	1.7	ND	ND	ND	ND	ND	1.7	1	6	1.7	1.7
Tellurium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tin	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Titanium	510.0	570.0	2,700.0	1,300.0	2,300.0	2,100.0	1,580.0	6	6	2,700.0	510.0
Vanadium	17.0	20.0	74.0	37.0	69.0	120.0	56.2	6	6	120.0	17.0
Yttrium	3.9	4.6	26.0	12.0	31.0	22.0	16.6	6	6	31.0	3.9
Zinc	19.0	21.0	110.0	100.0	64.0	73.0	64.5	6	6	110.0	19.0
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
OP-DDE	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Pesticides (ug/kg)	0	0	0	0	0	0					
PCBs (ug/kg)											
PCB-1248	ND	120 J	ND	ND	ND	ND	120.0	1	6	120.0	120.0
PCB-1254	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total PCBs (ug/kg)	0	120 J	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 10-11 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Chlorophenoxypropanol	ND	ND	ND	80.0 JN	ND	ND	80.0	1	6	80.0	80.0
Chrysene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclopropazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Docosanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Eicosene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Lupenone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 10-11 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Octadecanal	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Oxybisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Petroleum Product	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Quaterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Taraxerol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecadiene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tocopherol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Unidentified Compound	ND	ND	ND	1,000.0 J	ND	ND	1,000.0	1	6	1,000.0	1,000.0
Total Extractable Organics (ug/kg)	0	0	0	1,080 J	0	0					
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
o-Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0					

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 15 - 16 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 15-16 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)											
Aluminum	6,700.0	27,000.0	43,000.0	17,000.0	23,000.0	41,000.0	26,283.3	6	6	43,000.0	6,700.0
Antimony	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Arsenic	ND	ND	ND	ND	ND	10.0	10.0	1	6	10.0	10.0
Barium	18.0	270.0	350.0	60.0	330.0	150.0	196.3	6	6	350.0	18.0
Beryllium	ND	3.4	7.1	2.2	3.4	4.5	4.1	5	6	7.1	2.2
Cadmium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Calcium	ND	350.0	ND	ND	ND	ND	350.0	1	6	350.0	350.0
Chromium	2.7	17.0	120.0	25.0	80.0	140.0	64.1	6	6	140.0	2.7
Cobalt	ND	12.0	23.0	3.5	17.0	17.0	14.5	5	6	23.0	3.5
Copper	1.5	6.6	28.0	2.6	22.0	28.0	14.8	6	6	28.0	1.5
Iron	3,100.0	33,000.0	47,000.0	6,100.0	31,000.0	47,000.0	27,866.7	6	6	47,000.0	3,100.0
Lead	340.0	ND	ND	ND	ND	ND	340.0	1	6	340.0	340.0
Magnesium	150.0	11,000.0	21,000.0	960.0	10,000.0	8,600.0	8,618.3	6	6	21,000.0	150.0
Manganese	270.0	1,000.0	1,100.0	1,100.0	670.0	730.0	811.7	6	6	1,100.0	270.0
Mercury	ND	0.07	ND	ND	0.06	0.10	0.1	3	6	0.1	0.1
Molybdenum	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nickel	ND	ND	59.0	8.9	30.0	37.0	33.7	4	6	59.0	8.9
Potassium	500.0	12,000.0	16,000.0	960.0	9,000.0	7,300.0	7,626.7	6	6	16,000.0	500.0
Selenium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Silver	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Sodium	ND	ND	ND	ND	ND	NA	#DIV/0!	0	6	0.0	0.0
Strontium	ND	14.0	ND	ND	ND	ND	14.0	1	6	14.0	14.0
Tellurium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tin	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Titanium	33.0	3,000.0	4,100.0	290.0	2,300.0	2,000.0	1,953.8	6	6	4,100.0	33.0
Vanadium	1.9	90.0	110.0	8.6	73.0	110.0	65.6	6	6	110.0	1.9
Yttrium	7.2	25.0	20.0	2.9	28.0	24.0	17.9	6	6	28.0	2.9
Zinc	4.2	91.0	150.0	23.0	83.0	84.0	72.5	6	6	150.0	4.2
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
OP-DDE	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Pesticides (ug/kg)	0	0	0	0	0	0					
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
PCB-1254	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total PCBs (ug/kg)	0	0	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 15-16 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	200.0 J	ND	ND	200.0	1	6	200.0	200.0
Chlorophenoxypropanol	ND	ND	ND	80.0 J	ND	ND	80.0	1	6	80.0	80.0
Chrysene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclopropazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Docosanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Eicosene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Lupenone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpropylbenzene (2 isomers)	ND	ND	ND	200.0 JN	ND	ND	200.0	1	6	200.0	200.0
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 20 - 21 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 20-21 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)											
Aluminum	8,800.0	29,000.0	34,000.0	9,800.0	26,000.0	30,000.0	22,933	6	6	34,000.0	8,800.0
Antimony	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Arsenic	ND	ND	ND	31.0	ND	ND	31	1	6	31.0	31.0
Barium	37.0	230.0	230.0	63.0	370.0	210.0	190	6	6	370.0	37.0
Beryllium	0.72	4.4	5.1	3.4	6.2	4.8	4	6	6	6.2	0.7
Cadmium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Calcium	ND	500.0	210.0	120.0	ND	ND	277	3	6	500.0	120.0
Chromium	6.9	13.0	150.0	27.0	9.7	140.0	58	6	6	150.0	6.9
Cobalt	ND	13.0	19.0	4.2	19.0	30.0	17	5	6	30.0	4.2
Copper	1.6	8.5	16.0	5.2	8.7	26.0	11	6	6	26.0	1.6
Iron	4,300.0	27,000.0	34,000.0	10,000.0	30,000.0	46,000.0	25,217	6	6	46,000.0	4,300.0
Lead	210.0	ND	ND	ND	ND	ND	210	1	6	210.0	210.0
Magnesium	200.0	8,800.0	8,000.0	2,200.0	6,000.0	14,000.0	6,533	6	6	14,000.0	200.0
Manganese	530.0	1,200.0	690.0	1,500.0	1,400.0	940.0	1,043	6	6	1,500.0	530.0
Mercury	ND	ND	ND	ND	0.08	0.06	0	2	6	0.1	0.1
Molybdenum	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nickel	ND	ND	70.0	15.0	7.2	47.0	35	4	6	70.0	7.2
Potassium	530.0	8,800.0	7,200.0	2,000.0	8,000.0	12,000.0	6,422	6	6	12,000.0	530.0
Selenium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Silver	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Sodium	ND	ND	ND	ND	ND	NA	#DIV/0!	0	6	0.0	0.0
Strontium	ND	16.0	ND	1.7	3.6	ND	7	3	6	16.0	1.7
Tellurium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tin	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Titanium	51.0	2,400.0	2,700.0	720.0	2,600.0	2,700.0	1,862	6	6	2,700.0	51.0
Vanadium	2.4	89.0	79.0	16.0	50.0	110.0	58	6	6	110.0	2.4
Yttrium	10.0	22.0	12.0	6.2	26.0	22.0	16	6	6	26.0	6.2
Zinc	6.7	80.0	66.0	32.0	84.0	140.0	68	6	6	140.0	6.7
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
OP-DDE	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Pesticides (ug/kg)	0	0	0	0	0	0					
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
PCB-1254	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total PCBs (ug/kg)	0	0	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 20-21 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (Dimethylethyl) Methylphenol	ND	200.0 J	ND	ND	ND	ND	200	1	6	200.0	200.0
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Chrysene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclopropazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Docosanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Eicosene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Lupenone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 20-21 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Octadecanal	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Oxybisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Petroleum Product	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Quaterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Taraxerol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecadiene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tocopherol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Unidentified Compound	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Extractable Organics (ug/kg)	0	200 J	0	0	0	0					
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
o-Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0					

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 25 - 26 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 25-26 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)											
Aluminum	6,300.0	17,000.0	42,000.0	12,000.0	32,000.0	30,000.0	36300	6	6	42000	6300
Antimony	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Arsenic	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Barium	35.0	140.0	450.0	66.0	280.0	210.0	245	6	6	450	35
Beryllium	0.66	2.8	4.3	3.0	8.7	3.9	4.56	6	6	8.7	0.66
Cadmium	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Calcium	81.0	340.0	ND	110.0	690.0	210.0	291	5	6	690	81
Chromium	24.0	16.0	120.0	36.0	18.0	120.0	144	6	6	120	16
Cobalt	ND	6.9	22.0	4.3	9.5	21.0	#VALUE!	5	6	22	4.3
Copper	2.4	4.5	36.0	4.6	5.6	28.0	30.4	6	6	36	2.4
Iron	4,400.0	20,000.0	43,000.0	9,800.0	29,000.0	41,000.0	45400	6	6	43000	4400
Lead	240.0	ND	ND	ND	ND	ND	#VALUE!	1	6	240	240
Magnesium	290.0	6,100.0	22,000.0	2,500.0	7,400.0	12,000.0	12290	6	6	22000	290
Manganese	460.0	940.0	916.0	1,200.0	850.0	770.0	1230	6	6	1200	460
Mercury	ND	ND	ND	ND	ND	0.08	#VALUE!	1	6	0.08	0.08
Molybdenum	1.6	ND	ND	ND	ND	ND	#VALUE!	1	6	1.6	1.6
Nickel	3.1	ND	63.0	14.0	10.0	41.0	44.1	5	6	63	3.1
Potassium	700.0	6,800.0	20,000.0	2,100.0	9,800.0	11,000.0	11700	6	6	20000	700
Selenium	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Silver	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Sodium	ND	ND	ND	ND	ND	NA	#VALUE!	0	6	0	0
Strontium	ND	10.0	ND	ND	18.0	ND	#VALUE!	2	6	18	10
Tellurium	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Tin	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Titanium	68.0	1,800.0	4,100.0	700.0	2,900.0	2,500.0	2568	6	6	4100	68
Vanadium	3.1	58.0	100.0	17.0	52.0	100.0	103.1	6	6	100	3.1
Yttrium	7.6	15.0	23.0	6.4	22.0	19.0	26.6	6	6	23	6.4
Zinc	12.0	57.0	140	30.0	92.0	100.0	112	6	6	140	12
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
OP-DDE	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Total Pesticides (ug/kg)	0	0	0	0	0	0					
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
PCB-1254	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Total PCBs (ug/kg)	0	0	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 25-26 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Bis (Dimethylethyl) Methylphenol	90 JN	ND	ND	ND	ND	ND	#VALUE!	1	6	90	90
Chlorophenoxypropanol	ND	ND	ND	100.0 JN	ND	ND	#VALUE!	1	6	100	100
Chrysene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Cyclopropazulene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Docosanoic Acid	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Eicosene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Lupenone	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Methylbenzenesulfonamide	ND	ND	ND	90.0 JN	ND	ND	#VALUE!	1	6	90	90
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Methylpyrrolidinone	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 25-26 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D.	*18-SL*	*21-SL*	*85-SL*	*23-SL*	*24-SL*	*26-SL*	*AVER.*	*FREQ. OF DETECT.*	*NO. OF SAMPLES*	*MAX.*	*MIN.*
DETECTED PARAMETER											
Naphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Octadecanal	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Oxybisbenzene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Petroleum Product	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phenol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phenylbixyxlohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phenylterphenyl	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phthalic Acid	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Quaterphenyl	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Taraxerol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Terphenyl	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Tetradecadiene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Tocopherol	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Unidentified Compound	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Total Extractable Organics (ug/kg)	90 J	0	0	190 J	0	0					
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
o-Xylene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	#VALUE!	0	6	0	0
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0					

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA SOIL SAMPLE RESULTS

SAMPLING INTERVAL 30 - 31 FEET

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 30-31 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)											
Aluminum	5,900.0	20,000.0	26,000.0	19,000.0	22,000.0	40,000.0	22,150.0	6	6	40,000.0	5,900.0
Antimony	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Arsenic	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Barium	27.0	160.0	340.0	100.0	200.0	200.0	171.2	6	6	340.0	27.0
Beryllium	0.58	3.4	5.7	5.1	7.1	4.9	4.5	6	6	7.1	0.6
Cadmium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Calcium	71.0	520.0	1,100.0	820.0	1,000.0	ND	702.2	5	6	1,100.0	71.0
Chromium	36.0	23.0	110.0	57.0	23.0	110.0	59.8	6	6	110.0	23.0
Cobalt	ND	7.8	12.0	11.0	8.8	18.0	11.5	5	6	18.0	7.8
Copper	2.2	5.1	23.0	7.4	7.1	20.0	10.8	6	6	23.0	2.2
Iron	3,800.0	24,000.0	27,000.0	17,000.0	24,000.0	30,000.0	20,966.7	6	6	30,000.0	3,800.0
Lead	160.0	ND	ND	ND	ND	ND	160.0	1	6	160.0	160.0
Magnesium	210.0	7,700.0	14,000.0	5,500.0	6,400.0	10,000.0	7,301.7	6	6	14,000.0	210.0
Manganese	340.0	860.0	550.0	970.0	850.0	670.0	706.7	6	6	970.0	340.0
Mercury	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Molybdenum	1.9	ND	ND	ND	ND	ND	1.9	1	6	1.9	1.9
Nickel	ND	ND	41.0	22.0	12.0	42.0	29.3	4	6	42.0	12.0
Potassium	610.0	9,000.0	12,000.0	5,300.0	8,200.0	10,000.0	7,518.3	6	6	12,000.0	610.0
Selenium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Silver	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Sodium	ND	ND	ND	ND	ND	NA	#DIV/0!	0	6	0.0	0.0
Strontium	ND	16.0	8.7	8.0	16.0	ND	12.2	4	6	16.0	8.0
Tellurium	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tin	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Titanium	52.0	2,100.0	2,800.0	1,700.0	2,300.0	2,400.0	1,892.0	6	6	2,800.0	52.0
Vanadium	2.3	69.0	68.0	33.0	45.0	72.0	48.2	6	6	72.0	2.3
Yttrium	5.2	14.0	23.0	14.0	25.0	14.0	15.9	6	6	25.0	5.2
Zinc	5.1	68.0	67.0	52.0	79.0	100.0	61.9	6	6	100.0	5.1
Pesticides (ug/kg)											
4,4'-DDD	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Alpha-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Gamma-chlordane/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
OP-DDE	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trans-nonachlor/2	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Pesticides (ug/kg)	0	0	0	0	0	0					
PCBs (ug/kg)											
PCB-1248	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
PCB-1254	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total PCBs (ug/kg)	0	0	0	0	0	0					

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 30-31 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / BOREHOLE I.D.	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (ug/kg)											
(3- and/or 4-) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Diethylmethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Dimethylethyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(Methylethyl) Methyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bicyclohexylphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (2-Ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Bis (Dimethylethyl) Methylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Chlorophenoxypropanol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Chrysene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclohexyldienebisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Cyclopropazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Decahydrotetramethylmethanoazulene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dihydrodimethylindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Diisocyanatomethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxy (propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethoxyphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethyl (Propenyl) Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylethylphenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylnaphthalene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Dimethylphenol (not 2,4)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Docosanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Eicosene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethenylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethyldimethylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hexadecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Hydroxyphenylpropanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Lupenone	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methyl (Propenyl) Benzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylbenzenesulfonamide (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylheptadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpentadecanoic acid, methyl ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpropylbenzene (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Methylpyrrolidinone	ND	ND	ND	300 JN	ND	ND	300.0	1	6	300.0	300.0
Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Nonylphenol (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0

USEPA SOIL SAMPLE RESULTS - OCT./NOV. 1990
SAMPLING INTERVAL - 30-31 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

BOREHOLE I.D. / DETECTED PARAMETER	18-SL	21-SL	85-SL	23-SL	24-SL	26-SL	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Octadecanal	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Octahydromethanoindenobisoxirene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Oxybisbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Petroleum Product	ND	ND	ND	N	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenoxybiphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbicyclohexyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylbixylohexyl (3 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phenylterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Ethylhexyldiphenyl Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phosphoric Acid, Tris (methylphenyl) Ester	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Phthalic Anhydride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Quaterphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Taraxerol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Terphenyl Phenozybiphenyl (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecadiene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetradecanoic Acid	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydrodimethyl (Methylethyl) Naphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetrahydromethylnaphthalene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tetramethylbenzne (2 isomers)	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Tocopherol	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Trimethylphenyldihydroindene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Unidentified Compound	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Extractable Organics (ug/kg)	0	0	0	300 J	0	0					
Purgeable Organic Compounds (ug/kg)											
Methylene Chloride	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
(m- and/or p-) Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
o-Xylene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Ethylmethylbenzene	ND	ND	ND	ND	ND	ND	#DIV/0!	0	6	0.0	0.0
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0					

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN

USEPA CONCRETE CORE SAMPLE RESULTS

USEPA CONCRETE CORE SAMPLE RESULTS - DECEMBER 1990

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

DETECTED PARAMETER / SAMPLE I.D.	CC-01	CC-02	CC-03	CC-04	CC-05	CC-05A	CC-06	CC-07	CC-08
Metals (ug/kg)									
Arsenic	9.0	ND	10.0	ND	12.0	ND	ND	ND	ND
Barium	350.0 J	270.0 J	150.0 J	380.0 J	720.0 J	250.0 J	270.0 J	230.0 J	470.0 J
Chromium	ND	ND	41.0	ND	ND	ND	ND	ND	ND
Lead	230.0	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	5.0 J	ND	ND	ND	ND
Silver	42.0	15.0 J	ND	17.0 J	16.0 J	19.0 J	18.0 J	15.0 J	18.0 J
All Pesticides Analyzed (ug/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs	NA	NA	NA	NA	NA	NA	NA	NA	NA
Extractable Organic Compounds (ug/kg)									
(3-and/or 4-)Methylphenol	ND	ND	ND	ND	57.0 J	64.0 J	300.0 J	140.0 J	ND
2-Methylphenol	ND	ND	ND	ND	ND	9.0 J	ND	64.0 J	ND
Unidentified Compounds	10.0 J	ND	ND	ND	ND	20.0 J	ND	30.0 J	20.0 J
Total Extractable Organics (ug/kg)	10.0 J	0	0	0	57.0 J	93.0	300.0 J	234.0 J	20.0 J
Purgeable Organic Compounds (ug/kg)									
Styrene	ND	ND	ND	ND	ND	ND	ND	5.0 J	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	6.0 J	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	130.0 J	ND
Total Purgeable Organics (ug/kg)	0	0	0	0	0	0	0	141 J	0
Dioxin/Furans (ug/Kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- Only detected parameters shown

USEPA CONCRETE CORE SAMPLE RESULTS - DECEMBER 1990

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (ug/kg)					
Arsenic	10.3	3	9	12.0	9.0
Barium	343.3	9	9	720.0	150.0
Chromium	41.0	1	9	41.0	41.0
Lead	230.0	1	9	230.0	230.0
Selenium	5.0	1	9	5.0	5.0
Silver	20.0	8	9	42.0	15.0
Extractable Organic Compounds (ug/kg)					
(3-and/or 4-)Methylphenol	140.3	4	9	300.0	57.0
2-Methylphenol	36.5	2	9	64.0	9.0
Unidentified Compounds	20.0	4	9	30.0	10.0
Purgeable Organic Compounds (ug/kg)					
Styrene	5.0	1	9	5.0	5.0
Tetrachloroethene	6.0	1	9	6.0	6.0
Toluene	130.0	1	9	130.0	130.0

Notes:
- N - Presumptive evidence of presence of material
- NA - Not Analyzed
- ND - Not Detected
- J - Estimated value
- All totals include values that are qualified with J and JN
- Only detected parameters shown

USEPA SUB-CONCRETE SOIL SAMPLE RESULTS

USEPA SUB-CONCRETE SOIL SAMPLE RESULTS - DECEMBER 1990

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE I.D.	*SLU-01*	*SLU-02*	*SLU-03*	*SLU-04*	*SLU-05*	*SLU-06*	*SLU-07*	*SLU-08*
DETECTED PARAMETER								
Metals (mg/kg)								
Aluminum	23,000.0	14,000.0	21,000.0	15,000.0	NA	8,900.0	14,000.0	16,000.0
Arsenic	15.0 J	19.0 J	14.0 J	ND	NA	7.4 J	ND	ND
Barium	160.0	130.0	180.0	100.0	NA	75.0	110.0	140.0
Beryllium	1.5	ND	ND	ND	NA	ND	ND	ND
Cadmium	ND	3.9	ND	ND	NA	ND	ND	ND
Calcium	5,300.0	1,600.0	5,800.0	6,000.0	NA	3,800.0	27,000.0	8,300.0
Chromium	43.0 J	19.0 J	27.0 J	12.0 J	NA	11.0 J	27.0 J	19.0 J
Cobalt	150.0 J	21.0 J	110.0 J	240.0 J	NA	120.0 J	390.0 J	550.0 J
Copper	12.0	26.0	29.0	21.0	NA	14.0	36.0	25.0
Iron	29,000.0	23,000.0	24,000.0	20,000.0	NA	15,000.0	19,000.0	2,300.0
Lead	15.0 J	47.0 J	81.0 J	4.3 J	NA	4.2 J	38.0 J	5.3 J
Magnesium	6,700.0	3,700.0	5,900.0	6,000.0	NA	4,100.0	6,100.0	7,000.0
Manganese	560.0	720.0	660.0	440.0	NA	330.0	320.0	380.0
Nickel	41.0	5.0	29.0	9.4	NA	9.1	20.0	29.0
Potassium	7,000.0 J	4,500.0 J	6,500.0 J	7,200.0 J	NA	5,500.00 J	6,600.0 J	8,100.0 J
Selenium	ND	ND	ND	ND	NA	ND	ND	ND
Sodium	ND	ND	ND	590.0 J	NA	ND	ND	ND
Thallium	ND	ND	ND	ND	NA	ND	ND	ND
Vanadium	62.0	35.0	63.0	41.0	NA	28.0	38.0	51.0
Zinc	66.0 J	180.0 J	130.0 J	45.0 J	NA	51.0 J	84.0 J	54.0 J
Pesticides (mg/kg)								
Aldrin	ND	ND	ND	ND	ND	0.01	ND	ND
Total Pesticides (mg/kg)	0	0	0	0	0	0.01	0	0
PCBs (mg/kg)								
PCB-1242	ND	ND	9.0	ND	24.0	ND	ND	ND
Dichlorobiphenyl	ND	ND	ND	ND	8.0 JN	ND	ND	ND
Trichlorobiphenyl	ND	ND	ND	ND	3.0 JN	ND	ND	ND
Tetrachlorobiphenyl	ND	ND	ND	ND	1.0 JN	ND	ND	ND
Total PCBs (mg/kg) (See Notes)	0	0	9.0	0	24.0 J	0	0	0

USEPA SUB-CONCRETE SOIL SAMPLE RESULTS - DECEMBER 1990

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE I.D.	SLU-01	SLU-02	SLU-03	SLU-04	SLU-05	SLU-06	SLU-07	SLU-08
DETECTED PARAMETER								
Extractable Organic Compounds (mg/kg)								
(3-and/or 4-)Methylphenol	ND	ND	ND	ND	0.16 J	ND	ND	ND
2-Chloronaphthalene	ND	ND	0.4 J	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	1.3 J	ND
Acenaphthene	ND	0.087 J	ND	ND	ND	ND	ND	ND
Anthracene	ND	0.12 J	ND	ND	ND	ND	ND	ND
Benzofluoranthene	ND	0.53	ND	ND	ND	ND	ND	ND
Benzyl Butyl Phthalate	ND	ND	ND	ND	0.14 J	ND	ND	ND
Bis(2-Ethylhexyl)Phthalate	3.0	11.0	34.0	0.6	5.9	13.0	17.0	0.72
Chrysene	ND	0.34 J	0.86 J	ND	0.41 J	ND	ND	ND
Di-N-Octylphthalate	ND	ND	0.29 J	ND	ND	ND	4.9 J	ND
Dimethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	0.83	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	0.1 J
Menthatriene	ND	ND	ND	ND	ND	ND	10.0 JN	ND
Naphthalene	ND	ND	ND	ND	ND	ND	1.7 J	ND
Nonylphenol	ND	ND	ND	ND	ND	ND	30.0 JN	ND
Oxybisethanol	ND	ND	ND	ND	4.0 J	ND	ND	ND
Petroleum Product	ND	N	N	ND	N	ND	ND	N
Phenanthrene	ND	0.62 J	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	0.33 J	1.1	1.7	5.0 J	ND
Phenylbicyclohexyl (See Notes)	ND	ND	6JN/ND	ND	ND/7JN	ND/.1JN	ND	ND
Phenylterphenyl	ND	ND	2.0 JN	ND	ND	ND	ND	ND
Phthalic Anhydride	ND	ND	1.0 JN	ND	ND	ND	ND	ND
Pyrene	ND	0.62 J	ND	ND	ND	ND	ND	ND
Terphenyl	ND	ND	1.0 JN	ND	2.0 JN	ND	ND	ND
Tetramethylbutylphenol	ND	ND	ND	ND	ND	ND	30.0 JN	ND
Unidentified Compounds	0.53 J	ND	10.0 J	ND	10.0 J	ND	300.0 J	8.03
Total Extractable Organics (mg/kg)	3.53 J	14.147 J	49.55 J	0.93 J	24 J	14.7 J	399.9 J	8.85 J
Purgeable Organic Compounds (mg/kg)								
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	0.007	ND	0.003 J	ND	29.0 J	0.056
Trichloroethene	ND	ND	0.006 J	ND	0.002 J	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	0.31
Toluene	ND	ND	ND	ND	ND	ND	2,200.0	ND
Total Purgeable Organics (mg/kg)	0	0	0.013 J	0	0.005 J	0	2,229 J	0.366

Notes:
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- Only detected parameters shown
- Phenylbicyclohexyl - was reported twice with conflicting data, consequently, rendering this data suspect. However, both values are shown where applicable. Column totals assume this compound was not detected
- Total PCB concentrations based on Arochlor 1242 concentration

USEPA SUB-CONCRETE SOIL SAMPLE RESULTS - DECEMBER 1990

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)					
Aluminum	15,985.71	7	8	23,000.00	8,900.00
Arsenic	13.85	4	8	19.00	7.40
Barium	127.86	7	8	180.00	75.00
Beryllium	1.50	1	8	1.50	1.50
Cadmium	3.90	1	8	3.90	3.90
Calcium	8,257.14	7	8	27,000.00	1,600.00
Chromium	22.57	7	8	43.00	11.00
Cobalt	225.86	7	8	550.00	21.00
Copper	23.29	7	8	36.00	12.00
Iron	18,900.00	7	8	29,000.00	2,300.00
Lead	27.83	7	8	81.00	4.20
Magnesium	5,642.86	7	8	7,000.00	3,700.00
Manganese	487.14	7	8	720.00	320.00
Nickel	20.36	7	8	41.00	5.00
Potassium	6,485.71	7	8	8,100.00	4,500.00
Selenium	#DIV/0!	0	8	0.00	0.00
Sodium	590.00	1	8	590.00	590.00
Thallium	#DIV/0!	0	8	0.00	0.00
Vanadium	45.43	7	8	63.00	28.00
Zinc	87.14	7	8	180.00	45.00
Pesticides (mg/kg)					
Aldrin	0.01	1	8	0.01	0.01
PCBs (mg/kg)					
PCB-1242	16.50	2	8	24.00	9.00
Dichlorobiphenyl	8.00	1	8	8.00	8.00
Trichlorobiphenyl	3.00	1	8	3.00	3.00
Tetrachlorobiphenyl	1.00	1	8	1.00	1.00

USEPA SUB-CONCRETE SOIL SAMPLE RESULTS - DECEMBER 1990

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	AVER.	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Extractable Organic Compounds (mg/kg)					
(3-and/or 4-)Methylphenol	0.16	1	8	0.16	0.16
2-Chloronaphthalene	0.40	1	8	0.40	0.40
2-Methylnaphthalene	1.30	1	8	1.30	1.30
Acenaphthene	0.087	1	8	0.087	0.087
Anthracene	0.12	1	8	0.12	0.12
Benzofluoranthene	0.53	1	8	0.53	0.53
Benzyl Butyl Phthalate	0.14	1	8	0.14	0.14
Bis(2-Ethylhexyl)Phthalate	10.65	8	8	34.00	0.60
Chrysene	0.54	3	8	0.86	0.34
Di-N-Octylphthalate	2.60	2	8	4.90	0.29
Dimethyl Phthalate	#DIV/0!	0	8	0.00	0.00
Fluoranthene	0.83	1	8	0.83	0.83
Hexachlorobutadiene	0.10	1	8	0.10	0.10
Menthatriene	10.00	1	8	10.00	10.00
Naphthalene	1.70	1	8	1.70	1.70
Nonylphenol	30.00	1	8	30.00	30.00
Oxybisethanol	4.00	1	8	4.00	4.00
Petroleum Product	#DIV/0!	0	8	0.00	0.00
Phenanthrene	0.62	1	8	0.62	0.62
Phenol	2.03	4	8	5.00	0.33
Phenylbicyclohexyl (See Notes)	#DIV/0!	0	8	0.00	0.00
Phenylterphenyl	2.00	1	8	2.00	2.00
Phthalic Anhydride	1.00	1	8	1.00	1.00
Pyrene	0.62	1	8	0.62	0.62
Terphenyl	1.50	2	8	2.00	1.00
Tetramethylbutylphenol	30.00	1	8	30.00	30.00
Unidentified Compounds	65.71	5	8	300.00	0.53
Purgeable Organic Compounds (mg/kg)					
Methylene Chloride	#DIV/0!	0	8	0.00	0.00
1,1,1-Trichloroethane	7.267	4	8	29.000	0.003
Trichloroethene	0.004	2	8	0.006	0.002
Tetrachloroethene	0.31	1	8	0.31	0.31
Toluene	2,200.0	1	8	2,200.0	2,200.0

Notes:

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- ND - Not Detected
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- All totals include values that are qualified with J and JN
- Only detected parameters shown
- Phenylbicyclohexyl - was reported twice with conflicting data, consequently, rendering this data suspect. However, both values are shown where applicable. Column totals assume this compound was not detected
- Total PCB concentration based on Arochlor 1242 concentration

APPENDIX C

ANALYTICAL DATA SUMMARIES - SOIL SAMPLES

NUS CORPORATION SAMPLING ACTIVITIES

MAY 1990

NUS CORPORATION SOIL SAMPLE RESULTS

SAMPLING INTERVAL 0.5 - 1.0 FEET

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	0.5'- 1.0'							
BOREHOLE I.D.	*CS-SS-01*	*CS-SS-08*	*CS-SS-29*	*CS-SS-28*	*CS-SS-10*	*CS-SS-17*	*CS-SS-16*	*CS-SS-09*
DETECTED PARAMETER								
Metals (mg/kg)								
Aluminum	33,000	26,000	27,000	22,000	19,000	14,000	25,000	20,000
Antimony	ND	6.5 UR	ND	6.4 UR	--	8 UR	7.4 UR	6.3 UR
Arsenic	ND	13 J	44 J	11 J	28 J	12 J	ND	ND
Barium	66	110	130	220	190	87	120	110
Beryllium	ND	3.2	2	4.5	ND	2.2	ND	ND
Cadmium	ND	ND	ND	ND	--	ND	ND	ND
Calcium	140	440	670	700	850	1,100	1,100	ND
Chromium	23	46	32	23	24	22	54	19
Cobalt	11	16	11	13	19	6.1	11	12
Copper	ND	ND	ND	ND	ND	ND	ND	ND
Iron	31,000	38,000	30,000	23,000	29,000	12,000	22,000	25,000
Lead	20 J	24 J	17 J	25 J	16 J	19 J	20 J	31 J
Magnesium	2,200	5,700	4,700	6,500	6,600	2,400	5,400	3,000
Manganese	310 J	770 J	580 J	370 J	420 J	330	280 J	300 J
Mercury	0.12 UR	0.13 UR	0.13 UR	0.12 UR	--	0.15 UR	0.14 UR	0.12 UR
Nickel	ND	15	ND	ND	ND	12	25	ND
Potassium	1,800	6,000	4,300	7,000	6,800	1,900	3,300	4,400
Selenium	ND	ND	ND	ND	--	ND	ND	ND
Silver	ND	ND	ND	ND	--	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	--	ND	ND	ND
Tin	NA	NA	NA	NA	--	NA	NA	NA
Vanadium	48	66	76	50	--	28	40	30
Zinc	51	96	59	76	85	ND	61	48
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND
Pesticides (ug/kg)								
Alpha-BHC	ND	ND	ND	9.9 UR	ND	ND	ND	ND
Beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I (Alpha)	ND	ND	ND	ND	ND	ND	ND	ND
Dilldrin	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE(P,P'-DDE)	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II (Beta)	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD (P,P'-DDD)	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT(P,P'-DDT)	ND	ND	ND	ND	ND	ND	ND	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	*0.5' - 1.0'*							
BOREHOLE I.D.	*CS-SS-01*	*CS-SS-08*	*CS-SS-29*	*CS-SS-28*	*CS-SS-10*	*CS-SS-17*	*CS-SS-16*	*CS-SS-09*
DETECTED PARAMETER								
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone Chlordane/1	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-Chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-Chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides(µg/kg)	0	0	0	0	0	0	0	0
PCBs (µg/kg)								
PCB-1016	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (µg/kg)	0	0	0	0	0	0	0	0
Extractable Organic Compounds (µg/kg)								
Phenol	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroisopropyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND
(3-and/or 4-)Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodi-N-Propylamine	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	400 UR	410 UR	440 UR	410 UR	470 UR	510 UR	460 UR	420 UR
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Benzoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethoxy) Methane	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	*0.5' - 1.0'*							
BOREHOLE I.D.	*CS-SS-01*	*CS-SS-08*	*CS-SS-29*	*CS-SS-28*	*CS-SS-10*	*CS-SS-17*	*CS-SS-16*	*CS-SS-09*
DETECTED PARAMETER								
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene (HCCP)	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND
Flourene	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl-4,6-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine/Diphenylamine	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene (HCB)	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Butylphthalate	ND	ND	ND	ND	68 J	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND	ND	ND	ND
Benzyl Butyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(A)Anthracene	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Ethylhexyl) Phthalate	ND	ND	ND	ND	3,600	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(B and/or K)Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND
Benzo-A-Pyrene	ND	ND	ND	ND	ND	ND	ND	ND
Indeno (1,2,3-CD) Pyrene	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(A,H)Anthracene	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(GHI)Perylene	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compounds (µg/kg) / No.	4,000 J/9	4,000 J/8			20,000 J/12	10,000 J/14	2,000 J/1	

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	0.5' - 1.0'							
BOREHOLE I.D.	*CS-SS-01*	*CS-SS-08*	*CS-SS-29*	*CS-SS-28*	*CS-SS-10*	*CS-SS-17*	*CS-SS-16*	*CS-SS-09*
DETECTED PARAMETER								
Additional Extractable Organic Compounds (ug/kg)								
Amino Anthracenedione	--	--	--	--	--	--	--	--
Bromohexane	--	--	--	--	--	--	--	--
Cyclohexyldienebisbenzene	--	--	--	--	--	--	--	--
Dichloropropanol Phosphate	--	--	--	--	--	--	--	--
Dimethoxy Propenylphenol	--	--	--	--	--	2,000 JN	--	--
Dimethyl (Methyl Buladienyl) Cyclopropane	--	--	--	--	--	900 JN	--	--
Ethanediol Monoacetate	--	--	200 JN	--	--	--	--	--
Heptanone	--	--	--	--	--	--	--	--
Hexadecane	--	--	--	--	--	--	--	--
Hexadecanoic Acid	--	--	--	--	--	--	--	--
Methylethylbenzene	--	--	--	--	--	--	--	--
Nonylphenol (2 isomers)	--	--	--	--	--	--	--	--
Octahydromethylmethylene (Methylethyl) Naphthalene	--	--	--	--	--	--	--	--
Oxybispropene	--	--	--	--	--	--	--	--
Pentane	--	--	--	--	--	--	--	--
Petroleum Product	--	--	--	--	N	--	--	--
Phenoxybiphenyl	--	--	--	--	--	--	--	--
Phosphoric acid octyldiphenylester	--	--	--	--	--	--	--	--
Tetramethylbutylphenol	--	--	--	--	--	--	--	--
Trimethylbenzene	--	--	--	--	--	--	--	--
Trimethyldodecane	--	--	--	--	--	--	--	--
Total Extractable Organics (µg/kg)	4,000 J	4,000 J	200 J	0	23,668 J	12,900 J	2,000 J	0
Purgeable Organic Compounds (ug/kg)								
Acetone	ND	ND	ND	ND	ND	ND	ND	ND
Butanol	--	--	--	--	--	--	--	--
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Butyl Ketone	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Ethyl Ketone	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	*0.5' - 1.0'*							
BOREHOLE I.D.	*CS-SS-01*	*CS-SS-08*	*CS-SS-29*	*CS-SS-28*	*CS-SS-10*	*CS-SS-17*	*CS-SS-16*	*CS-SS-09*
DETECTED PARAMETER								
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compounds (µg/kg) / No.								
Total Purgeable Organics (µg/kg)	0	0	0	0	0	0	0	0
Toxicity Equivalence Value (TEQ)	6.7 J	5.4 J	7.3 J	0.33 J	5.7 J	1.8 J	2.8 J	--

Notes:
- N - Presumptive evidence of presence of material
- J - Estimated value
- ND - Not detected
- NA - Not analyzed
- U - Material was analyzed for but not detected. The number is the minimum quantitation limit.
- R - QC indicates that data is unusable. Compound may or may not be present.
- -- - Unknown if compound was not analyzed or not detected
- Organic compounds reported in µg/kg
- Inorganic compounds reported in mg/kg
- TEQ results reported in ng/kg

Source:
- Final Report, Listing Site Inspection, Caldwell Systems, Inc., Lenoir, Caldwell County, North Carolina, Volume I dated October 31, 1990, and Volume II dated October 30, 1990, prepared by NUS Corporation.

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	0.5' - 1.0'											
BOREHOLE I.D. / DETECTED PARAMETER	CS-SS-27	CS-SS-14	CS-SS-05	CS-SS-04	CS-SS-13	CS-SS-07	CS-SS-06	CS-SS-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.
Metals (mg/kg)												
Aluminum	10,000	23,000	8,000	14,000	25,000	11,000	20,000	26,000	16	16	33,000	8,000
Antimony	5.5 UR	6.4 UR	6.3 UR	ND	ND	6.2 UR	7 UR	ND	0		0	0
Arsenic	3.5 J	4.1 J	3.5 J	13 J	9 J	2.6 J	11 J	9.8 J	13	16	44	3
Barium	480	130	59	110	200	98	120	130	16	16	480	59
Beryllium	ND	ND	ND	ND	1.5	ND	ND	ND	5	16	5	2
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	0		0	0
Calcium	5,400	ND	1,100	930	ND	1,300	940	910	13	16	5,400	140
Chromium	100	89	14	22	79	14	25	34	16	16	100	14
Cobalt	23	13	6.8	12	15	9.7	12	12	16	16	23	6
Copper	210	ND	ND	26	ND	24	ND	ND	3	16	210	24
Iron	16,000	21,000	12,000	14,000	34,000	150,000	21,000	27,000	16	16	150,000	12,000
Lead	460 JN	ND	11 J	45 J	12 J	25 J	17 J	25 J	15	16	460	11
Magnesium	4,100	5,600	3,100	3,800	5,800	4,400	4,000	5,000	16	16	6,600	2,200
Manganese	500 J	740 J	240 J	640 J	690 J	300 J	450 J	390 J	16	16	770	240
Mercury	ND	0.12 UR	0.12 UR	0.13 UR	0.12 UR	0.12 UR	0.14 UR	0.16 UR	0		0	0
Nickel	11	32	ND	ND	ND	ND	11	12	7	16	32	11
Potassium	4,600	5,000	3,900	4,100	8,200	4,800	4,600	5,500	16	16	8,200	1,800
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	0		0	0
Silver	ND	ND	ND	ND	ND	ND	ND	ND	0		0	0
Sodium	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	0		0	0
Tin	NA	NA	NA	NA	NA	NA	NA	NA	0		0	0
Vanadium	31	44	27	31	60	38	39	58	15	15	76	27
Zinc	390	39	49	120	95	55	100	120	15	16	390	39
Cyanide	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Pesticides (ug/kg)												
Alpha-BHC	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Beta-BHC	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Delta-BHC	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Heptachlor	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Aldrin	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Endosulfan I (Alpha)	ND	ND	ND	ND	ND	ND	54 UR	ND	0	16	0	0
Dilldrin	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0
4,4'-DDE(P,P'-DDE)	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0
Endrin	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0
Endosulfan II (Beta)	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0
4,4'-DDD (P,P'-DDD)	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0
4,4'-DDT(P,P'-DDT)	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	0.5' - 1.0'											
BOREHOLE I.D. / DETECTED PARAMETER	CS-SS-27	CS-SS-14	CS-SS-05	CS-SS-04	CS-SS-13	CS-SS-07	CS-SS-06	CS-SS-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.
Methoxychlor	ND	ND	ND	ND	ND	ND	540 UR	ND	0	16	0	0
Endrin Ketone Chlordane/1	ND	ND	ND	ND	ND	ND	110 UR	ND	0	16	0	0
Gamma-Chlordane/2	ND	ND	ND	ND	ND	ND	540 UR	ND	0	16	0	0
Alpha-Chlordane/2	ND	ND	ND	ND	ND	ND	540 UR	ND	0	16	0	0
Toxaphene	ND	ND	ND	ND	ND	ND	1,100 UR	ND	0	16	0	0
Total Pesticides(µg/kg)	0	0	0	0	0	0	0	0				
PCBs (µg/kg)												
PCB-1016	ND	ND	ND	ND	ND	ND	540 UR	ND	0	16	0	0
PCB-1221	ND	ND	ND	ND	ND	ND	540 UR	ND	0	16	0	0
PCB-1232	ND	ND	ND	ND	ND	ND	540 UR	ND	0	16	0	0
PCB-1242	ND	ND	ND	ND	ND	ND	540 UR	ND	0	16	0	0
PCB-1248	48,000	ND	ND	ND	ND	ND	540 UR	ND	1	16	48,000	48,000
PCB-1254	ND	ND	ND	ND	ND	ND	1,100 UR	ND	0	16	0	0
PCB-1260	ND	ND	ND	ND	ND	ND	1,100 UR	ND	0	16	0	0
Total PCBs (µg/kg)	48,000	0	0	0	0	0	0	0				
Extractable Organic Compounds (µg/kg)												
Phenol	890	ND	ND	ND	ND	ND	ND	ND	1	16	890	890
Bis(2-Chloroethyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Benzyl Alcohol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2-Methylphenol	300 J	ND	ND	ND	ND	ND	ND	ND	1	16	300	300
Bis(2-Chloroisopropyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
(3-and/or 4-)Methylphenol	700	ND	ND	ND	ND	ND	ND	ND	1	16	700	700
N-Nitrosodi-N-Propylamine	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Hexachloroethane	350 UR	400 UR	380 UR	440 UR	420 UR	390 UR	440 UR	530 UR	0	16	0	0
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2,4-Dimethylphenol	570	ND	ND	ND	ND	ND	ND	ND	1	16	570	570
Benzoic Acid	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Bis(2-Chloroethoxy) Methane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	0.5' - 1.0'											
BOREHOLE I.D. / DETECTED PARAMETER	CS-SS-27	CS-SS-14	CS-SS-05	CS-SS-04	CS-SS-13	CS-SS-07	CS-SS-06	CS-SS-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.
4-Chloro-3-Methylphenol	ND	ND	90 J	ND	ND	ND	ND	ND	1	16	90	90
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Hexachlorocyclopentadiene (HCCP)	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Dimethyl Phthalate	130 J	ND	ND	ND	ND	ND	ND	ND	1	16	130	130
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
4-Nitrophenol	ND	ND	190 J	ND	ND	ND	ND	ND	1	16	190	190
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Diethyl Phthalate	ND	ND	ND	81 J	ND	ND	ND	ND	1	16	81	81
4-Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Flourene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
2-Methyl-4,6-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
N-Nitrosodiphenylamine/Diphenylamine	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
4-Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Hexachlorobenzene (HCB)	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Di-N-Butylphthalate	150 J	ND	ND	55 J	ND	ND	67 J	92 J	5	16	150	55
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Pyrene	ND	ND	68 J	ND	ND	ND	ND	ND	1	16	68	68
Benzyl Butyl Phthalate	890	ND	77 J	330 J	ND	ND	74 J	150 J	5	16	890	74
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Benzo(A)Anthracene	250 J	ND	ND	ND	ND	ND	ND	ND	1	16	250	250
Chrysene	150 J	ND	3,800	ND	ND	ND	ND	ND	2	16	3,800	150
Bis(2-Ethylhexyl) Phthalate	33,000	ND	ND	5,400	ND	ND	6,100	2,200	5	16	33,000	2,200
Di-N-Octylphthalate	1100	ND	ND	170 J	ND	ND	ND	ND	2	16	1,100	170
Benzo(B and/or K)Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Benzo-A-Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Indeno (1,2,3-CD) Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Dibenzo(A,H)Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Benzo(GHI)Perylene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Unidentified Compounds (µg/kg) / No.	10,000 J/8		6,000 J/16	10,000 J/16		9,000 J/1	8,000 J/15	8,000 J/1	11	16	20,000	2,000

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	0.5'- 1.0'											
BOREHOLE I.D. / DETECTED PARAMETER	CS-SS-27	CS-SS-14	CS-SS-05	CS-SS-04	CS-SS-13	CS-SS-07	CS-SS-06	CS-SS-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.
Additional Extractable Organic Compounds (ug/kg)												
Amino Anthracenedione	--	--	--	--	--	--	600 JN	--	1		600	600
Bromohexane	--	--	--	--	--	2,000 JN	--	700 JN	2		2,000	700
Cyclohexyldienebisbenzene	2,000 JN	--	--	--	--	--	--	--	1		2,000	2,000
Dichloropropanol Phosphate	6,000 JN	--	--	--	--	--	--	--	1		6,000	6,000
Dimethoxy Propenylphenol	--	--	--	--	--	--	--	--	1		2,000	2,000
Dimethyl (Methyl Butadienyl) Cyclopropane	--	--	--	--	--	--	--	--	1		900	900
Ethanediol Monoacetate	--	--	--	--	400 JN	--	--	1,000 JN	3		1,000	200
Heptanone	--	--	--	--	--	--	--	--	0		0	0
Hexadecane	--	--	--	--	--	--	--	--	0		0	0
Hexadecanoic Acid	--	--	--	--	--	800 JN	--	400 JN	2		800	400
Methylethylbenzene	--	--	--	--	--	--	--	--	0		0	0
Nonylphenol (2 isomers)	--	--	--	--	--	--	--	--	0		0	0
Octahydromethylmethylene (Methylethyl) Naphthalene	--	--	--	--	--	--	--	--	0		0	0
Oxybispropene	--	--	--	--	--	--	--	--	0		0	0
Pentane	--	--	--	--	--	--	--	--	0		0	0
Petroleum Product	N	--	--	--	--	--	--	--	0		0	0
Phenoxybiphenyl	7,000 JN	--	--	--	--	--	--	--	1		7,000	7,000
Phosphoric acid octyldiphenylester	--	--	--	--	--	--	--	--	0		0	0
Tetramethylbutylphenol	--	--	--	--	--	--	--	--	0		0	0
Trimethylbenzene	--	--	--	--	--	--	--	--	0		0	0
Trimethyldodecane	--	--	--	--	--	--	--	--	0		0	0
Total Extractable Organics (µg/kg)	63,130 J	0	10,225 J	16,036 J	400 J	11,800 J	14,841 J	12,542 J				
Purgeable Organic Compounds (ug/kg)												
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Butanol	--	--	--	--	--	--	--	--	0		0	0
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Methyl Butyl Ketone	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Methyl Ethyl Ketone	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Tetrachloroethylene	5 J	ND	ND	ND	ND	ND	ND	ND	1	16	5	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,1,1-Trichloroethane	4 J	ND	ND	ND	ND	ND	ND	7 J	2	16	7	4
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Total Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 0.5-1.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	0.5' - 1.0'											
BOREHOLE I.D.	CS-SS-27	CS-SS-14	CS-SS-05	CS-SS-04	CS-SS-13	CS-SS-07	CS-SS-06	CS-SS-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.
DETECTED PARAMETER												
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Bromodichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Trichloroethylene	5 J	ND	ND	ND	ND	ND	ND	ND	1	16	5	5
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Chlorobenzene	ND	ND	ND	2 J	ND	ND	ND	ND	1	16	2	2
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	0	16	0	0
Unidentified Compounds (µg/kg) / No.									0	16		
Total Purgeable Organics (µg/kg)	14 J	0	0	2 J	0	0	0	7 J				
Toxicity Equivalence Value (TEQ)	--	--	1.5 J	--	0.26 J	--	--	10 J	10		10	0.26

Notes:
- N - Presumptive evidence of presence of material
- J - Estimated value
- ND - Not detected
- NA - Not analyzed
- U - Material was analyzed for but not detected. The number is the minimum quantitation limit.
- R - QC indicates that data is unusable. Compound may or may not be present.
- -- - Unknown if compound was not analyzed or not detected
- Organic compounds reported in µg/kg
- Inorganic compounds reported in mg/kg
- TEQ results reported in ng/kg

Source:
- Final Report, Listing Site Inspection, Caldwell Systems, Inc., Lenoir, Caldwell County, North Carolina, Volume I dated October 31, 1990, and Volume II dated October 30, 1990, prepared by NUS Corporation.

NUS CORPORATION SOIL SAMPLE RESULTS

SAMPLING INTERVAL 3 - 4 FEET

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	*3.0' - 4.0'*							
BOREHOLE I.D.	*CS-SB-01*	*CS-SB-08*	*CS-SB-23*	*CS-SB-22*	*CS-SB-10*	*CS-SB-17*	*CS-SB-16*	*CS-SB-09*
DETECTED PARAMETER								
Metals (mg/kg)								
Aluminum	39,000	35,000	20,000	--	22,000	24,000	19,000	21,000
Antimony	--	--	--	--	--	--	--	--
Arsenic	ND	12 J	12 J	--	37 J	16 J	ND	ND
Barium	77	190	47	--	200	110	77	160
Beryllium	ND	2.7	ND	--	1.6	2.9	ND	1.7
Cadmium	ND	ND	ND	--	ND	ND	ND	ND
Calcium	ND	210	670	--	1,000	810	630	ND
Chromium	30	95	29	--	29	27	28	68
Cobalt	12	24	12	--	19	10	9	18
Copper	ND	ND	ND	--	ND	ND	ND	ND
Iron	34,000	37,000	19,000	--	29,000	18,000	14,000	30,000
Lead	22 J	18 J	16 J	--	18 J	17 J	18 J	45 J
Magnesium	2,100	12,000	1,600	--	6,900	3,200	3,100	3,300
Manganese	470 J	720 J	440	--	460 J	330 J	240 J	660 J
Mercury	--	--	--	--	--	--	--	--
Nickel	7.8	36	ND	--	ND	17	13	7.3
Potassium	1,700	9,700	1,300	--	7,300	2,200	2,000	6,400
Selenium	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--
Sodium	ND	ND	ND	--	ND	ND	ND	ND
Thallium	--	--	--	--	--	--	--	--
Tin	--	--	--	--	--	--	--	--
Vanadium	55	87	38	--	83	45	24	35
Zinc	55	88	ND	--	87	40	50	70
Cyanide	ND	ND	ND	--	ND	ND	ND	ND
Pesticides (ug/kg)								
Alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND
Beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND
Delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC (Lindane)	ND	ND	ND	ND	29	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I (Alpha)	ND	ND	ND	ND	ND	ND	ND	ND
Dilldrin	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE(P,P'-DDE)	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II (Beta)	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD (P,P'-DDD)	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT(P,P'-DDT)	ND	ND	ND	ND	ND	ND	ND	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	*3.0' - 4.0'*							
BOREHOLE I.D.	*CS-SB-01*	*CS-SB-08*	*CS-SB-23*	*CS-SB-22*	*CS-SB-10*	*CS-SB-17*	*CS-SB-16*	*CS-SB-09*
DETECTED PARAMETER								
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Ketone Chlordane/1	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-Chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-Chlordane/2	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND
Total Pesticides (µg/kg)	0	0	0	0	29	0	0	0
PCBs (µg/kg)								
PCB-1016	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (µg/kg)	0	0	0	0	0	0	0	0
Extractable Organic Compounds (µg/kg)								
Phenol	ND	ND	ND	9,000	ND	ND	ND	ND
Bis(2-Chloroethyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroisopropyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND
(3-and/or 4-)Methylphenol	ND	ND	ND	ND	81 J	ND	ND	ND
N-Nitrosodi-N-Propylamine	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	380 UR	330 UR	390 UR	740 UR	450 UR	590 UR	470 UR	370 UR
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	110 J	ND	ND	ND
Benzoic Acid	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethoxy) Methane	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	1,600	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	3.0' - 4.0'							
BOREHOLE I.D.	*CS-SB-01*	*CS-SB-08*	*CS-SB-23*	*CS-SB-22*	*CS-SB-10*	*CS-SB-17*	*CS-SB-16*	*CS-SB-09*
DETECTED PARAMETER								
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	1,000	ND	ND	ND	ND
Hexachlorocyclopentadiene (HCCP)	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl Phthalate	ND	ND	ND	ND	380 J	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
4-Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND
Flourene	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl-4,6-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine/Diphenylamine	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene (HCB)	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND
Di-N-Butylphthalate	ND	ND	ND	730 J	45 J	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND	ND	ND	ND
Benzyl Butyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(A)Anthracene	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Ethylhexyl) Phthalate	ND	ND	ND	10,000	30,000	ND	ND	ND
Di-N-Octylphthalate	ND	ND	ND	3,900	ND	ND	ND	ND
Benzo(B and/or K)Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND
Benzo-A-Pyrene	ND	ND	ND	ND	ND	ND	ND	ND
Indeno (1,2,3-CD) Pyrene	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(A,H)Anthracene	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(GHI)Perylene	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compounds (µg/kg) / No.				100,000 J/7	1,000 J/1	400 J/1	6,000 J/8	

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	3.0' - 4.0'							
BOREHOLE I.D. / DETECTED PARAMETER	CS-SB-01	CS-SB-08	CS-SB-23	CS-SB-22	CS-SB-10	CS-SB-17	CS-SB-16	CS-SB-09
Additional Extractable Organic Compounds (ug/kg)								
Amino Anthracenedione	--	--	--	--	--	--	--	--
Bromohexane	--	--	--	--	--	--	--	--
Cyclohexyldienebisbenzene	--	--	--	--	--	--	--	--
Dichloropropanol Phosphate	--	--	--	--	--	--	--	--
Dimethoxy Propenylphenol	--	--	--	--	--	--	--	--
Dimethyl (Methyl Butadienyl) Cyclopropane	--	--	--	--	--	--	400 JN	--
Ethanediol Monoacetate	--	100 JN	--	--	--	--	--	--
Heptanone	--	--	--	40 JN	--	--	--	--
Hexadecane	--	--	--	--	--	--	--	--
Hexadecanoic Acid	--	--	--	7,000 JN	--	--	--	--
Methylethylbenzene	--	--	--	30 JN	--	--	--	--
Nonylphenol (2 isomers)	--	--	--	10,000 JN	--	--	--	--
Octahydromethylmethylene (Methylethyl) Naphthalene	--	--	--	--	--	--	300 JN	--
Oxybispropene	--	--	--	20 JN	--	--	--	--
Pentane	--	--	--	100 JN	--	--	--	--
Petroleum Product	--	--	--	--	N	--	--	--
Phenoxybiphenyl	--	--	--	--	--	--	--	--
Phosphoric acid octyldiphenylester	--	--	--	--	--	--	--	--
Tetramethylbutylphenol	--	--	--	8,000 JN	--	--	--	--
Trimethylbenzene	--	--	--	40 JN	--	--	--	--
Trimethyldodecane	--	--	--	--	--	--	400 JN	--
Total Extractable Organics (µg/kg)	0	100 J	0	151,460 J	31,616 J	400 J	7,100 J	0
Purgeable Organic Compounds (µg/kg)								
Acetone	ND	ND	ND	19,000 J	ND	ND	ND	ND
Butanol	--	--	--	80 JN	--	--	--	--
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	12	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	18 J	ND	3 J	ND	ND
Methyl Butyl Ketone	ND	ND	ND	89 J	ND	ND	ND	ND
Methyl Ethyl Ketone	ND	ND	ND	9,000	ND	ND	ND	ND
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	2 J	ND	ND	ND
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	100	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	1 J	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	110 J	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	*3.0' - 4.0'*							
BOREHOLE I.D.	*CS-SB-01*	*CS-SB-08*	*CS-SB-23*	*CS-SB-22*	*CS-SB-10*	*CS-SB-17*	*CS-SB-16*	*CS-SB-09*
DETECTED PARAMETER								
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Compounds (µg/kg) / No.				30 J/1				
Total Purgeable Organics (µg/kg)	0	0	0	28,440 J	2 J	3 J	0	0
Toxicity Equivalence Value (TEQ)	--	--	--	--	--	--	--	--

Notes:
- N - Presumptive evidence of presence of material
- J - Estimated value
- ND - Not detected
- NA - Not analyzed
- U - Material was analyzed for but not detected. The number is the minimum quantitation limit.
- R - QC indicates that data is unusable. Compound may or may not be present.
- -- - Unknown if compound was not analyzed or not detected
- Organic compounds reported in µg/kg
- Inorganic compounds reported in mg/kg
- TEQ results reported in ng/kg

Source:
- Final Report, Listing Site Inspection, Caldwell Systems, Inc., Lenoir, Caldwell County, North Carolina, Volume I dated October 31, 1990, and Volume II dated October 30, 1990, prepared by NUS Corporation.

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	3.0' - 4.0'											3'-15'
BOREHOLE I.D. / DETECTED PARAMETER	CS-SB-20	CS-SB-14	CS-SB-05	CS-SB-04	CS-SB-07	CS-SB-06	CS-SB-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.	CS-SB-21
Metals (mg/kg)												
Aluminum	12,000	5,500	30,000	29,000	260,000	27,000	43,000	14		260,000.0	5,500.0	32,000
Antimony	--	--	--	--	--	--	--	0				--
Arsenic	4.1 J	ND	24 J	100 JN	ND	32 J	6.6 J	9		100.0	4.1	15 J
Barium	700	16	110	420	72	190	330	14		700.0	16.0	210
Beryllium	ND	ND	1.7	2.3	ND	8.5	4.6	8		8.5	1.6	2
Cadmium	1.8	ND	ND	ND	ND	ND	ND	1		1.8	1.8	ND
Calcium	8,000	ND	270	ND	150	150	690	10		8,000.0	150.0	1,200
Chromium	110	ND	14	22	29	10	21	13		110.0	9.7	39
Cobalt	22	ND	11	27	8.9	15	34	13		34.0	8.7	20
Copper	160	ND	8.6	ND	ND	ND	18	3		160.0	8.6	ND
Iron	19,000	1,500	25,000	46,000	22,000	24,000	50,000	14		50,000.0	1,500.0	28,000
Lead	430 JN	32 J	28 J	8.5 J	21 J	12 J	23	14		430.0	8.5	18 J
Magnesium	5,100	100	5,600	11,000	3,200	3,800	10,000	14		12,000.0	100.0	6,300
Manganese	520 J	390 J	370 J	1,000 J	680 J	1,700 J	2,000 J	14		2,000.0	240.0	480 J
Mercury	--	--	--	--	--	--	--	0				--
Nickel	11	ND	7.8	7.9	ND	ND	25	9		36.0	7.3	10
Potassium	6,200	ND	6,300	12,000	3,000	4,500	12,000	13		12,000.0	1,300.0	6,200
Selenium	--	--	--	--	--	--	--	0				--
Silver	--	--	--	--	--	--	--	0				--
Sodium	360	ND	ND	ND	ND	ND	ND	1		360.0	360.0	ND
Thallium	--	--	--	--	--	--	--	0				--
Tin	--	--	--	--	--	--	--	0				--
Vanadium	37	ND	64	130	51	50	120	13		130.0	24.0	74
Zinc	590	ND	79	78	44	84	130	12		590.0	40.0	67
Cyanide	ND	ND	ND	ND	ND	ND	ND	0		0.0	0.0	ND
Pesticides (ug/kg)												
Alpha-BHC	ND	ND	ND	ND	47 UR	ND	ND	0	15	0.0	0.0	ND
Beta-BHC	ND	ND	ND	ND	47 UR	ND	ND	0	15	0.0	0.0	ND
Delta-BHC	ND	ND	ND	ND	47 UR	ND	ND	0	15	0.0	0.0	ND
Gamma-BHC (Lindane)	ND	ND	ND	ND	47 UR	ND	ND	1	15	29.0	29.0	ND
Heptachlor	ND	ND	ND	ND	47 UR	ND	ND	0	15	0.0	0.0	ND
Aldrin	ND	ND	ND	ND	47 UR	ND	ND	0	15	0.0	0.0	ND
Heptachlor Epoxide	ND	ND	ND	ND	47 UR	ND	ND	0	15	0.0	0.0	ND
Endosulfan I (Alpha)	ND	ND	ND	ND	47 UR	ND	ND	0	15	0.0	0.0	ND
Dilldrin	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND
4,4'-DDE(P,P'-DDE)	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND
Endrin	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND
Endosulfan II (Beta)	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND
4,4'-DDD (P,P'-DDD)	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND
Endosulfan Sulfate	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND
4,4'-DDT(P,P'-DDT)	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	3.0'- 4.0'											3'-15'
BOREHOLE I.D. / DETECTED PARAMETER	CS-SB-20	CS-SB-14	CS-SB-05	CS-SB-04	CS-SB-07	CS-SB-06	CS-SB-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.	CS-SB-21
Methoxychlor	ND	ND	ND	ND	470 UR	ND	ND	0	15	0.0	0.0	ND
Endrin Ketone Chlordane/1	ND	ND	ND	ND	94 UR	ND	ND	0	15	0.0	0.0	ND
Gamma-Chlordane/2	ND	ND	ND	ND	470 UR	ND	ND	0	15	0.0	0.0	ND
Alpha-Chlordane/2	ND	ND	ND	ND	470 UR	ND	ND	0	15	0.0	0.0	ND
Toxaphene	ND	ND	ND	ND	940 UR	ND	ND	0	15	0.0	0.0	ND
Total Pesticides (µg/kg)	0	0	0	0	0	0	0					0
PCBs (ug/kg)												
PCB-1016	ND	ND	ND	ND	470 UR	ND	ND	0	15	0.0	0.0	ND
PCB-1221	ND	ND	ND	ND	470 UR	ND	ND	0	15	0.0	0.0	ND
PCB-1232	ND	ND	ND	ND	470 UR	ND	ND	0	15	0.0	0.0	ND
PCB-1242	ND	ND	ND	ND	470 UR	ND	ND	0	15	0.0	0.0	ND
PCB-1248	620	ND	ND	ND	470 UR	ND	ND	1	15	620.0	620.0	ND
PCB-1254	ND	ND	ND	ND	940 UR	ND	ND	0	15	0.0	0.0	ND
PCB-1260	ND	ND	ND	ND	940 UR	ND	ND	0	15	0.0	0.0	ND
Total PCBs (µg/kg)	620	0	0	0	0	0	0					0
Extractable Organic Compounds (ug/kg)												
Phenol	ND	ND	68 J	ND	ND	ND	ND	2	15	9,000.0	68.0	ND
Bis(2-Chloroethyl) Ether	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Benzyl Alcohol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Bis(2-Chloroisopropyl) Ether	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
(3-and/or 4-)Methylphenol	120 J	ND	ND	ND	ND	ND	ND	2	15	120.0	81.0	ND
N-Nitrosodi-N-Propylamine	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Hexachloroethane	340 UR	--	460 UR	400 UR	390 UR	410 UR	510 UR	14		0.0	0.0	390 UR
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Isophorone	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2,4-Dimethylphenol	110 J	ND	ND	ND	ND	ND	ND	2	15	110.0	110.0	ND
Benzoic Acid	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Bis(2-Chloroethoxy) Methane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	1	15	1,600.0	1,600.0	ND
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	3.0' - 4.0'											3'-15'
BOREHOLE I.D. / DETECTED PARAMETER	CS-SB-20	CS-SB-14	CS-SB-05	CS-SB-04	CS-SB-07	CS-SB-06	CS-SB-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.	CS-SB-21
4-Chloro-3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	1	15	1,000.0	1,000.0	ND
Hexachlorocyclopentadiene (HCCP)	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Dimethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	1	15	380.0	380.0	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Diethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
4-Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Flourene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
2-Methyl-4,6-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
N-Nitrosodiphenylamine/Diphenylamine	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
4-Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Hexachlorobenzene (HCB)	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Anthracene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Di-N-Butylphthalate	94 J	ND	ND	ND	ND	ND	ND	3	15	730.0	45.0	54 J
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Pyrene	49 J	ND	ND	ND	ND	ND	ND	1	15	49.0	49.0	ND
Benzyl Butyl Phthalate	550	ND	ND	ND	ND	ND	ND	1	15	550.0	550.0	66 J
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Benzo(A)Anthracene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Bis(2-Ethylhexyl) Phthalate	18,000	ND	ND	ND	ND	ND	ND	3	15	30,000.0	10,000.0	1,900
Di-N-Octylphthalate	200 J	ND	ND	ND	ND	ND	55 J	3	15	3,900.0	55.0	130 J
Benzo(B and/or K)Fluoranthene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Benzo-A-Pyrene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Indeno (1,2,3-CD) Pyrene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Dibenzo(A,H)Anthracene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Benzo(GHI)Perylene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Unidentified Compounds (µg/kg) / No.	10,000 J/10				4,000 J/7		1,000 J/1	7	15	100,000.0	400.0	900 J/3

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	3.0' - 4.0'											3'-15'
BOREHOLE I.D. / DETECTED PARAMETER	CS-SB-20	CS-SB-14	CS-SB-05	CS-SB-04	CS-SB-07	CS-SB-06	CS-SB-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.	CS-SB-21
Additional Extractable Organic Compounds (ug/kg)												
Amino Anthracenedione	--	--	--	--	--	--	--	0		0.0	0.0	--
Bromohexane	--	--	--	--	--	--	800 JN	1		800.0	800.0	--
Cyclohexyldienebisbenzene	--	--	--	--	--	--	--	0		0.0	0.0	--
Dichloropropanol Phosphate	10,000 JN	--	--	--	--	--	--	1		10,000.0	10,000.0	--
Dimethoxy Propenylphenol	--	--	--	--	--	--	--	0		0.0	0.0	--
Dimethyl (Methyl Butadienyl) Cyclopropane	--	--	--	--	--	--	--	1		400.0	400.0	--
Ethanediol Monoacetate	--	--	--	--	--	--	1,000 JN	2		1,000.0	100.0	--
Heptanone	--	--	--	--	--	--	--	1		40.0	40.0	--
Hexadecane	700 JN	--	--	--	--	--	--	1		700.0	700.0	--
Hexadecanoic Acid	--	--	--	--	--	--	--	1		7,000.0	7,000.0	--
Methylethylbenzene	--	--	--	--	--	--	--	1		30.0	30.0	--
Nonylphenol (2 isomers)	--	--	--	--	--	--	--	1		10,000.0	10,000.0	--
Octahydromethylmethylene (Methylethyl) Naphthalene	--	--	--	--	--	--	--	1		300.0	300.0	--
Oxybispropene	--	--	--	--	--	--	--	1		20.0	20.0	--
Pentane	--	--	--	--	--	--	--	1		100.0	100.0	--
Petroleum Product	N	--	--	--	--	--	--	0		0.0	0.0	--
Phenoxybiphenyl	--	--	--	--	--	--	--	0		0.0	0.0	--
Phosphoric acid octyldiphenylester	--	--	--	--	--	--	--	0		0.0	0.0	2,000 JN
Tetramethylbutylphenol	--	--	--	--	--	--	--	1		8,000.0	8,000.0	--
Trimethylbenzene	--	--	--	--	--	--	--	1		40.0	40.0	--
Trimethyldodecane	--	--	--	--	--	--	--	1		400.0	400.0	--
Total Extractable Organics (ug/kg)	39,823 J	0	68 J	0	4,000 J	0	2,855 J					5,050 J
Purgeable Organic Compounds (ug/kg)												
Acetone	ND	ND	ND	ND	ND	ND	ND	1	15	19,000.0	19,000.0	ND
Butanol	--	--	--	--	--	--	--	1		80.0	80.0	--
Chloroform	ND	ND	ND	ND	ND	ND	2 J	1	15	2.0	2.0	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	1	15	12.0	12.0	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	2	15	18.0	3.0	ND
Methyl Butyl Ketone	ND	ND	ND	ND	ND	ND	ND	1	15	89.0	89.0	ND
Methyl Ethyl Ketone	ND	ND	ND	ND	ND	ND	ND	1	15	9,000.0	9,000.0	ND
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	1	15	2.0	2.0	ND
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	1	15	100.0	100.0	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	6 J	2	15	6.0	1.0	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND	1	15	110.0	110.0	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND

NUS CORP. SOIL SAMPLE RESULTS - MAY 1990
SAMPLING INTERVAL - 3.0-4.0 FEET

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	3.0' - 4.0'											3'-15'
BOREHOLE I.D. / DETECTED PARAMETER	CS-SB-20	CS-SB-14	CS-SB-05	CS-SB-04	CS-SB-07	CS-SB-06	CS-SB-12	FREQ. OF DETECT.	NO. OF SAMPLES	Max.	Min.	CS-SB-21
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Bromodichloropropane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	0	15	0.0	0.0	ND
Unidentified Compounds (µg/kg) / No.								1	15	30.0	30.0	--
Total Purgeable Organics (µg/kg)	0	0	0	0	0	0	8 J					0
Toxicity Equivalence Value (TEQ)	--	--	--	--	--	--	--	0		0.0	0.0	3.2 J

Notes:
- N - Presumptive evidence of presence of material
- J - Estimated value
- ND - Not detected
- NA - Not analyzed
- U - Material was analyzed for but not detected. The number is the minimum quantitation limit.
- R - QC indicates that data is unusable. Compound may or may not be present.
- -- - Unknown if compound was not analyzed or not detected
- Organic compounds reported in µg/kg
- Inorganic compounds reported in mg/kg
- TEQ results reported in ng/kg

Source:
- Final Report, Listing Site Inspection, Caldwell Systems, Inc., Lenoir, Caldwell County, North Carolina, Volume I dated October 31, 1990, and Volume II dated October 30, 1990, prepared by NUS Corporation.

APPENDIX D

ANALYTICAL DATA SUMMARIES - SOIL SAMPLES

PRC ENVIRONMENTAL MANAGEMENT, INC. SAMPLING ACTIVITIES

AUGUST 1988

PRC ENV. MAN. SOIL SAMPLE RESULTS - AUGUST 1988

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	Unknown	1.0' - 2.0'	2.0' - 3.0'										
BOREHOLE I.D. / DETECTED PARAMETER	S-18	S-17/17D	S-03	S-04	S-06	S-08	S-08D	S-10	S-14	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Metals (mg/kg)													
Aluminum	20,600	NA/NA	28,400	31,600	NA	17,400	18,500	NA	13,200	5	5	31,600	13,200
Arsenic	6.8	NA/NA	26	26	NA	12	16	NA	6.6	5	5	26	7
Barium	33	NA/NA	48	55	NA	119	134	NA	1,520	5	5	1,520	48
Beryllium	0.64	NA/NA	1.3	1.5	NA	1.4	1.6	NA	0.73	5	5	2	1
Boron	11 JB	NA/NA	2.1 JB	ND	NA	8.3 JB	1.1 JB	NA	6.1 JB	4	5	8	1
Calcium	76 JB	NA/NA	53 JB	38 JB	NA	877	762	NA	1,290	5	5	1,290	38
Chromium	22	NA/NA	53	26	NA	23	29	NA	18	5	5	53	18
Cobalt	2.8	NA/NA	6.6	6.2	NA	7.5	8.2	NA	28	5	5	28	6
Copper	5.3	NA/NA	4.3	5	NA	33	35	NA	247	5	5	247	4
Iron	13,700 J	NA/NA	16,100 J	23,200 J	NA	15,500 J	15,900 J	NA	15,900 J	5	5	23,200	15,500
Lead	15	NA/NA	26	22	NA	57	63	NA	71	5	5	71	22
Magnesium	1,300	NA/NA	2,010	3,100	NA	3,910	4,480	NA	4,780	5	5	4,780	2,010
Manganese	59	NA/NA	206	443	NA	557	554	NA	382	5	5	557	206
Molybdenum	2.1	NA/NA	3.1	3	NA	2.5	3.3	NA	3.7	5	5	4	3
Nickel	7.6	NA/NA	4.4	6.6	NA	7.5	6.8	NA	4.1	5	5	8	4
Potassium	1,010 JB	NA/NA	2,350 JB	3,670 JB	NA	4,900 JB	5,140 JB	NA	6,110 JB	5	5	6,110	2,350
Selenium	11 J	NA/NA	14 J	5.9 J	NA	7.3 J	8.2 J	NA	7.1 J	5	5	14	6
Silicon	138 JB	NA/NA	263 JB	51 JB	NA	104 JB	96 JB	NA	117 JB	5	5	263	51
Sodium	55 JB	NA/NA	45 JB	58 JB	NA	123 JB	113 JB	NA	149 JB	5	5	149	45
Thallium	15	NA/NA	16	11	NA	10	9.9	NA	10	5	5	16	10
Vanadium	27	NA/NA	44	53	NA	37	40	NA	35	5	5	53	35
Zinc	24 JB	NA/NA	34 JB	48	NA	135	139	NA	130	5	5	139	34
Extractable Organic Compounds (ug/kg)													
2-Chloronaphthalene	ND	NA/NA	5,000 JT	NA	NA	3,400 J	4,100 J	NA	NA	3	3	5,000	3,400
2-Methylnaphthalene	ND	NA/NA	2,900 J	NA	NA	6,000 J	7,500 J	NA	NA	3	3	7,500	2,900
2,4-Dimethylphenol	ND	NA/NA	ND	NA	NA	ND	ND	NA	NA	0	3	0	0
2-Methylphenol	ND	NA/NA	ND	NA	NA	ND	ND	NA	NA	0	3	0	0
4-Methylphenol	ND	NA/NA	ND	NA	NA	ND	ND	NA	NA	0	3	0	0
Bis (2-Ethylhexyl) Phthalate	ND	NA/NA	7,000 JT	NA	NA	66,000	64,000	NA	NA	3	3	66,000	7,000
Di-N-Butyl Phthalate	ND	NA/NA	6,400 RJ	NA	NA	ND	ND	NA	NA	1	3	6,400	6,400
Diethylphthalate	ND	NA/NA	6,200 RJ	NA	NA	18,000 RJ	28,000 RJ	NA	NA	3	3	28,000	6,200
Naphthalene	ND	NA/NA	2,800 JT	NA	NA	39,000	49,000	NA	NA	3	3	49,000	2,800
Phenol	ND	NA/NA	ND	NA	NA	ND	ND	NA	NA	0	3	0	0
Total Extractable Organics (µg/kg)	0	--/--	15,500 J	--	--	132,400 J	152,600 J	--	--				

PRC ENV. MAN. SOIL SAMPLE RESULTS - AUGUST 1988

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	Unknown	1.0' - 2.0'	2.0' - 3.0'										
BOREHOLE I.D. / DETECTED PARAMETER	S-18	S-17/17D	S-03	S-04	S-06	S-08	S-08D	S-10	S-14	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.
Purgeable Organic Compounds (µg/kg)													
1,1,1-Trichloroethane	ND	ND/ND	ND	ND	ND	ND	ND	ND	540 J	1	7	540	540
1,1,2-Trichloroethane	ND	ND/ND	ND	ND	ND	ND	ND	ND	ND	0	7	0	0
1,2-Dichloroethane	ND	ND/ND	ND	ND	ND	ND	ND	4 J	ND	1	7	4	4
Acetone	R	R/R	2,300	ND	R	1,500	1,300	R	2,800 T	4	7	2,800	1,300
Ethyl Benzene	ND	ND/ND	12,000	3,400	ND	3,100	2,500	ND	12,000	5	7	12,000	2,500
Methyl Ethyl Ketone (2-Butanone)	ND	ND/ND	ND	ND	ND	ND	ND	R	ND	0	7	0	0
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	ND/ND	ND	ND	ND	ND	ND	ND	ND	0	7	0	0
Methylene Chloride	ND	ND/ND	ND	ND	R	640 RJ	ND	R	ND	1	7	640	640
Styrene	ND	ND/ND	ND	ND	ND	ND	ND	ND	27,000	1	7	27,000	27,000
Tetrachloroethylene	ND	ND/ND	ND	ND	ND	ND	ND	ND	2,000	1	7	2,000	2,000
Toluene	ND	ND/ND	10,000	3,700	ND	18,000	15,000	ND	24,000	5	7	24,000	3,700
Xylenes	ND	ND/ND	71,000	29,000	ND	16,000	12,000	ND	64,000	5	7	71,000	12,000
Total Purgeable Organics (µg/kg)	0	0/0	95,300	36,100	0	39,240 J	30,800	4 J	129,540 J				

Notes:
- R - Compound detected in blank, value below acceptable reporting level
- J - Estimated value
- T - GC spectrum out of control limits, data suspect
- RJ - Compound detected in blank, value above acceptable reporting levels, estimated
- JB - Compound detected in blank, less than 5 times level in blank, estimated
- D - 'D' in last digit of sample identification denotes duplicate sample
- ND - Not detected
- NA - Not analyzed
- Organic compound results assumed to be reported in µg/kg. (Source report contains conflicting information on the concentration units for organic compounds)
- Inorganic compound results reported in mg/kg.
- Totals for extractable and purgeable compounds include values qualified with J and RJ and exclude values qualified with T and JT

Source:
- Final Sampling Investigation Report, Caldwell Systems, Inc., Lenoir, North Carolina, dated November 16, 1988, prepared by PRC Environmental Management, Inc..

PRC ENV. MAN. SOIL SAMPLE RESULTS - AUGUST 1988

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	1.0' - 3.0'								3.0' - 4.0'	3.0' - 5.0'	5.0' - 6.0'
BOREHOLE I.D. / DETECTED PARAMETER	S-11	S-13	S-15	S-16	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.	S-07	S-12	S-05
Metals (mg/kg)											
Aluminum	13,500	NA	22,200	NA	2	2	22,200	13,500	33,000	NA	NA
Arsenic	8.6	NA	13	NA	2	2	13	9	4.5	NA	NA
Barium	110	NA	268	NA	2	2	268	110	111	NA	NA
Beryllium	0.89	NA	3	NA	2	2	3	1	2.9	NA	NA
Boron	2.9 JB	NA	4.4 JB	NA	2	2	4	3	3 JB	NA	NA
Calcium	1,550	NA	149 JB	NA	2	2	1,550	149	231	NA	NA
Chromium	25	NA	64	NA	2	2	64	25	77	NA	NA
Cobalt	8.7	NA	11	NA	2	2	11	9	10	NA	NA
Copper	56	NA	14	NA	2	2	56	14	23	NA	NA
Iron	16,000 J	NA	26,400 J	NA	2	2	26,400	16,000	29,000 J	NA	NA
Lead	61	NA	21	NA	2	2	61	21	26	NA	NA
Magnesium	4,950	NA	9,650	NA	2	2	9,650	4,950	8,620	NA	NA
Manganese	410	NA	428	NA	2	2	428	410	475	NA	NA
Molybdenum	4.1	NA	2.7	NA	2	2	4	3	3.4	NA	NA
Nickel	6.6	NA	26	NA	2	2	26	7	34	NA	NA
Potassium	6,160 JB	NA	7,470 JB	NA	2	2	7,470	6,160	7,440 JB	NA	NA
Selenium	12 J	NA	13 J	NA	2	2	13	12	10 J	NA	NA
Silicon	76 JB	NA	64 JB	NA	2	2	76	64	261 JB	NA	NA
Sodium	158 JB	NA	63 JB	NA	2	2	158	63	120 JB	NA	NA
Thallium	12	NA	14	NA	2	2	14	12	10	NA	NA
Vanadium	38	NA	55	NA	2	2	55	38	63	NA	NA
Zinc	94	NA	68	NA	2	2	94	68	65	NA	NA
Extractable Organic Compounds (ug/kg)											
2-Chloronaphthalene	NA	NA	NA	NA	0	0	0	0	ND	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	0	0	0	0	ND	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	0	0	0	0	7,200 JT	NA	NA
2-Methylphenol	NA	NA	NA	NA	0	0	0	0	11,000 J	NA	NA
4-Methylphenol	NA	NA	NA	NA	0	0	0	0	54,000	NA	NA
Bis (2-Ethylhexyl) Phthalate	NA	NA	NA	NA	0	0	0	0	ND	NA	NA
Di-N-Butyl Phthalate	NA	NA	NA	NA	0	0	0	0	ND	NA	NA
Diethylphthalate	NA	NA	NA	NA	0	0	0	0	5,000 RJ	NA	NA
Naphthalene	NA	NA	NA	NA	0	0	0	0	ND	NA	NA
Phenol	NA	NA	NA	NA	0	0	0	0	42,000	NA	NA
Total Extractable Organics (µg/kg)	--	--	--	--					112,000 J	--	--

PRC ENV. MAN. SOIL SAMPLE RESULTS - AUGUST 1988

CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

SAMPLE DEPTH INTERVAL	1.0' - 3.0'								3.0' - 4.0'	3.0' - 5.0'	5.0' - 6.0'
BOREHOLE I.D. / DETECTED PARAMETER	S-11	S-13	S-15	S-16	FREQ. OF DETECT.	NO. OF SAMPLES	MAX.	MIN.	S-01	S-12	S-05
Purgeable Organic Compounds (µg/kg)											
1,1,1-Trichloroethane	ND	ND	ND	ND	0	4	0	0	ND	ND	ND
1,1,2-Trichloroethane	ND	2 J	ND	ND	1	4	2	2	ND	ND	ND
1,2-Dichloroethane	ND	200	ND	ND	1	4	200	200	ND	ND	ND
Acetone	R	82 RJ	R	ND	1	4	82	82	9,200	230 RJ	RJ
Ethyl Benzene	ND	ND	ND	ND	0	4	0	0	ND	10	ND
Methyl Ethyl Ketone (2-Butanone)	ND	10	ND	ND	1	4	10	10	2,000	32	16
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	ND	ND	ND	ND	0	4	0	0	490 J	56	ND
Methylene Chloride	R	R	R	ND	0	4	0	0	180 RJ	R	ND
Styrene	ND	ND	ND	ND	0	4	0	0	ND	ND	R
Tetrachloroethylene	ND	ND	ND	ND	0	4	0	0	ND	ND	ND
Toluene	ND	ND	ND	ND	0	4	0	0	ND	29	ND
Xylenes	ND	ND	ND	15 T	1	4	15	15	ND	49	ND
Total Purgeable Organics (µg/kg)	0	294 J	0	0					11,870 J	406 J	16

Notes:
- R - Compound detected in blank, value below acceptable reporting level
- J - Estimated value
- T - GC spectrum out of control limits, data suspect
- RJ - Compound detected in blank, value above acceptable reporting levels, estimated
- JB - Compound detected in blank, less than 5 times level in blank, estimated
- D - 'D' in last digit of sample identification denotes duplicate sample
- ND - Not detected
- NA - Not analyzed
- Organic compound results assumed to be reported in µg/kg. (Source report contains conflicting information on the concentration units for organic compounds)
- Inorganic compound results reported in mg/kg.
- Totals for extractable and purgeable compounds include values qualified with J and RJ and exclude values qualified with T and JT

Source:
- Final Sampling Investigation Report, Caldwell Systems, Inc., Lenoir, North Carolina, dated November 16, 1988, prepared by PRC Environmental Management, Inc.

APPENDIX E

ANALYTICAL DATA AND SUMMARY TABLES

- GROUNDWATER WELLS AND SPRINGS ADJACENT TO SITE

WELL CONSTRUCTION DATA AND ANALYTICAL DATA SUMMARY TABLES

USEPA APRIL 1991 WELL SAMPLING ACTIVITIES

Data Source: Sampling Investigation Report for the Caldwell Systems Inc. Site, Lenoir, Caldwell County, North Carolina, dated August 1991, prepared by USEPA

TABLE 3.18
WELL CONSTRUCTION DATA

Well Designation	Construction Material	Casing Diameter(in)	Total Depth (ft)	Depth to Water(ft)	Top of Casing Elevation(ft)
MW-A	PVC	2	85.6	70.4	1624.15
MW-B	PVC	2	87	50.50	1587.4
MW-C	PVC	2	26.5	21.0	1536.62
MW-2	PVC	2	22.47	7.22	1445.25
MW-3	PVC	2	52.05	34.67	1421.88
DW-1	GS	6	>150	92.20	1615.55
DW-2	GS	6	104	55.60	1617.13
HAAS	GS	6	>150	97.55	1411.18
EPA-MW1	SS	2	55.85	45.90	1601.56
EPA-MW2	SS	2	73.41	60.31	1593.48
EPA-MW3	SS	2	90.85	76.50	1631.18
EPA-MW4	SS	2	88.35	75.25	1609.17
EPA-MW5	SS	2	35.40	25.95	1506.09
EPA-MW6	SS	2	48.35	33.52	1470.14
EPA-MW7	SS	2	61.2	49.0	1467.32
POTABLE	GS	6	315	--	--
SEPTIC TANK	CONCRETE	36	APPX 20	APPX 18	--

PVC - Polyvinyl Chloride
GS - Galvanized Steel
SS - Stainless Steel
-- - Unknown
APPX - Approximately

TABLE 3.19
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	MW-A AREA 1	DW-1 AREA 1	DW-2 AREA 1	SEPTIC AREA 1
4,4'-DDT (P,P'-DDT)	ND	0.088J	ND	ND
4,4'-DDE (P,P'-DDE)	ND	0.081J	ND	ND
BIS(2-ETHYLHEXYL)PHTHALATE	17	ND	ND	ND
ETHYLHEXANOIC ACID	7JN	ND	ND	ND
UNIDENTIFIED COMPOUNDS	ND	300J (3)	ND	300J (2)
CHLORODIMETHYLPHENOL	ND	ND	ND	10JN
HEXADECANOIC ACID	ND	ND	ND	300JN
HEXADECENOIC ACID	ND	ND	ND	200JN
OCTADECANOIC ACID	ND	ND	ND	400JN
CHOLESTENE	ND	ND	ND	90JN
CHOLESTANOL ACETATE	ND	ND	ND	90JN

J - ESTIMATED VALUE
ND - NOT DETECTED
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	MW-A AREA 1	DW-1 AREA 1	DW-2 AREA 1	SEPTIC AREA 1
CAPROLACTAM	ND	60JN	3JN	ND
PETROLEUM PRODUCT	N	ND	ND	ND
NITROSOMORPHOLINE	ND	2JN	ND	ND
PHOSPHORIC ACID, DIETHYL ESTER	ND	10JN	ND	ND
1,1-DICHLOROETHENE	ND	16J	78J	ND
1,1-DICHLOROETHANE	ND	7.3J	220	ND
CIS-1,2-DICHLOROETHENE	ND	ND	28J	ND
1,2-DICHLOROETHANE	ND	20J	1400	ND
1,1,1-TRICHLOROETHANE	ND	74	280	1.3J
TETRACHLOROETHENE	ND	4.2J	ND	0.53J
TOLUENE	ND	ND	ND	20
NITROUS ACID, METHYL ESTER	ND	ND	ND	30JN

J - ESTIMATED VALUE
ND - NOT DETECTED
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	HAAS AREA 2	MW-C AREA 2	EPA-MW3 AREA 2	EPA MW4 AREA 2	POTABLE AREA 2
CAPROLACTAM	30JN	ND	ND	ND	ND
(DIMETHYLETHYL)METHYLPHENOL	ND	6JN	ND	ND	ND
DODECANOIC ACID	ND	ND	7JN	ND	ND
PETROLEUM PRODUCT	ND	N	N	ND	ND
NITROSOMORPHOLINE	ND	ND	ND	2JN	ND
PHOSPHORIC ACID, DIETHYL ESTER	ND	ND	ND	4JN	ND
METHYLBENZENESULFONAMIDE	ND	ND	ND	10JN	ND
UNIDENTIFIED COMPOUNDS	ND	ND	300J (1)	60J (2)	ND
1,1-DICHLOROETHENE	2.7J	ND	24J	4.7J	ND
1,1-DICHLOROETHANE	3.3J	ND	ND	ND	ND
1,2-DICHLOROETHANE	7.0	ND	ND	3.5J	ND
1,1,1-TRICHLOROETHANE	ND	ND	180	33	ND
TETRACHLOROETHENE	ND	ND	13J	1.3J	ND
TOLUENE	ND	ND	16J	ND	ND

J - ESTIMATED VALUE
ND - NOT DETECTED
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW1 AREA 3	EPA-MW2 AREA 3	MW-B AREA 3	EPA-MW5 AREA 4	EPA-MW6 AREA 4
BIS(2-CHLOROETHYL) ETHER	ND	ND	28	ND	ND
ISOPHORONE	ND	ND	1.3J	ND	ND
2-METHYLPHENOL	ND	ND	1.1J	ND	ND
PHOSPHORIC ACID, DIETHYL ESTER	ND	5JN	ND	ND	ND
TRIMETHYLBENZENESULFONAMIDE	ND	6JN	ND	ND	ND
METHYLBENZENESULFONAMIDE	ND	4JN	ND	ND	ND
ETHYLMETHYLBENZENESULFONAMIDE	ND	3JN	ND	ND	ND
(DIMETHYLETHYL)METHYLPHENOL	ND	ND	5000JN	ND	ND
PETROLEUM PRODUCT	ND	ND	N	ND	ND
CAPROLACTAM	ND	ND	40000JN	ND	100JN

J - ESTIMATED VALUE
ND - NOT DETECTED
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW1 AREA 3	EPA-MW2 AREA 3	MW-B AREA 3	EPA-MW5 AREA 4	EPA-MW6 AREA 4
TRICHLOROFLUOROMETHANE	1.4J	ND	ND	ND	ND
CHLOROETHANE	1.8J	ND	ND	ND	ND
1,1-DICHLOROETHENE	1.9J	32J	140J	ND	ND
1,1-DICHLOROETHANE	2.5J	34J	ND	ND	ND
1,2-DICHLOROETHANE	ND	40J	4800	ND	ND
1,1,1-TRICHLOROETHANE	14	250	610	ND	ND
TETRACHLOROETHENE	ND	19J	58J	ND	ND
TOLUENE	ND	ND	600	ND	ND
DICHLORODIFLUOROMETHANE	11J	ND	ND	ND	ND

J - ESTIMATED VALUE
ND - NOT DETECTED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW7 AREA 5	MW-2 AREA 5	MW-3 AREA 5
ALPHA-BHC	2.5	ND	ND
(3-AND/OR 4-)METHYLPHENOL	ND	ND	19
PHENOL	ND	ND	22
TRIMETHYLBICYCLOHEPTANONE	30JN	ND	ND
IODODIMETHYLBENZENE	ND	2JN	ND
BUTOXYETHANOL	ND	10JN	ND
CAMPHORSULFONIC ACID	30JN	5JN	ND
BUTANOIC ACID	ND	ND	3000JN
BUTANOIC ACID, METHYL ESTER	ND	ND	2000JN
METHYLPENTANOIC ACID	ND	ND	400JN
HEXANOIC ACID	ND	ND	200JN
METHYLPYRROLIDINONE	3JN	4JN	100JN
METHYLHEXANOIC ACID	ND	ND	800JN

J - ESTIMATED VALUE
ND - NOT DETECTED
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW7 AREA 5	MW-2 AREA 5	MW-3 AREA 5
HEPTANOIC ACID	ND	ND	300JN
(BUTOXYMETHYL)OXIRANE	ND	ND	100JN
CYCLOHEXANECARBOXYLIC ACID	ND	ND	300JN
TRIMETHYLBICYCLOHEPTANONE	ND	5JN	70JN
BENZOIC ACID	ND	ND	300JN
BENZENEPROPANOIC ACID	ND	ND	100JN
UNIDENTIFIED COMPOUNDS	100J (4)	20J (1)	300J (3)
VINYL CHLORIDE	5.4J	ND	6.8J
CHLOROETHANE	6.0J	ND	31
ACETONE	ND	ND	2000J
1,1-DICHLOROETHANE	16J	58	120
CIS-1,2-DICHLOROETHENE	120	12J	33
METHYL ETHYL KETONE	ND	ND	2200

J - ESTIMATED VALUE
ND - NOT DETECTED
N - PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
ORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW7 AREA 5	MW-2 AREA 5	MW-3 AREA 5
1,2-DICHLOROETHANE	5.2J	ND	ND
METHYL ISOBUTYL KETONE	ND	ND	290
TRICHLOROETHENE	18J	28J	8.0J
BENZENE	5.3J	6.4J	5.4J
TETRACHLOROETHENE	22J	59	2.6J
METHYL BUTYL KETONE	ND	ND	16J
TOLUENE	ND	ND	78
ETHYL BENZENE	ND	ND	24J
(M- AND/OR P-)XYLENE	ND	5.8J	58
O-XYLENE	6.3J	ND	22J
1,4-DICHLOROBENZENE	4.6J	ND	ND
DICHLOROFLUOROMETHANE	ND	100JN	ND
DICHLORODIFLUOROMETHANE	ND	17J	9.0J

J - ESTIMATED VALUE
ND - NOT DETECTED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	MW-A AREA 1	DW-1 AREA 1	DW-2 AREA 1	SEPTIC AREA 1
ARSENIC	ND	ND	ND	42
BORON	NA	NA	NA	NA
BARIUM	210	34	48	410
CADMIUM	ND	ND	ND	20
COBALT	ND	ND	ND	10
CHROMIUM	26	ND	ND	94
COPPER	20	14	31	810
MOLYBDENUM	ND	ND	ND	26
NICKEL	22	ND	ND	72
LEAD	ND	8.0	ND	150
TIN	ND	ND	ND	540
STRONTIUM	91	140	86	580

J - ESTIMATED VALUE
ND - NOT DETECTED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	MW-A AREA 1	DW-1 AREA 1	DW-2 AREA 1	SEPTIC AREA 1
TITANIUM	2400	6.1	38	760
VANADIUM	26	ND	ND	76
YTTRIUM	25	ND	ND	ND
ZINC	110	440	20	5600
MERCURY	ND	ND	ND	ND
ALUMINUM	50000	86	530	30000
MANGANESE	910	51	780	710
CALCIUM	9200	16000	11000	180000
MAGNESIUM	6700	3600	2000	11000
IRON	37000	1500	60000	19000
SODIUM	6500	16000	7600	32000
POTASSIUM	12000	2200	2400	45000

J - ESTIMATED VALUE
ND - NOT DETECTED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	HAAS AREA 2	MW-C AREA 2	EPA-MW3 AREA 2	EPA MW4 AREA 2	POTABLE AREA 2
ARSENIC	ND	ND	ND	ND	ND
BORON	NA	NA	5600J	NA	NA
BARIUM	14	60	37	35	26
CADMIUM	ND	ND	ND	ND	ND
COBALT	ND	3.2	ND	ND	ND
CHROMIUM	ND	12	9.0	17	ND
COPPER	5.6	5.8	8.6	8.1	12
MOLYBDENUM	ND	ND	4.5	ND	ND
NICKEL	ND	6.4	12	20	ND
LEAD	ND	ND	ND	ND	ND
TIN	ND	ND	ND	ND	ND
STRONTIUM	61	32	100	160	51

J - ESTIMATED VALUE
ND - NOT DETECTED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	HAAS AREA 2	MW-C AREA 2	EPA-MW3 AREA 2	EPA MW4 AREA 2	POTABLE AREA 2
TITANIUM	17	330	35	25	ND
VANADIUM	ND	13	5.0	2.5	ND
YTTRIUM	ND	6.6	ND	2.0	ND
ZINC	66	17	8.7	11	300
MERCURY	ND	ND	ND	1.0	ND
ALUMINUM	180	5200	1500	1000	26
MANGANESE	180	140	70	110	46
CALCIUM	32000	18000	11000	17000	12000
MAGNESIUM	4700	2400	2100	4300	1800
IRON	2300	4600	1900	1300	1700
SODIUM	9200	3400	23000	15000	5000
POTASSIUM	4000	3700	4500	2400	2200

J - ESTIMATED VALUE
ND - NOT DETECTED
NA - NOT ANALYZED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW1 AREA 3	EPA-MW2 AREA 3	MW-B AREA 3	EPA-MW5 AREA 4
ARSENIC	ND	ND	ND	110
BORON	4500J	NA	NA	NA
BARIUM	360	65	130	610
BERYLLIUM	6.0	ND	ND	13
CADMIUM	ND	ND	11	ND
COBALT	26	4.2	ND	52
CHROMIUM	160	32	ND	620
COPPER	74	16	17	150
MOLYBDENUM	14	2.4	ND	ND
NICKEL	340	65	49	220
LEAD	63	ND	ND	110
STRONTIUM	520	200	310	59

J - ESTIMATED VALUE
ND - NOT DETECTED
NA - NOT ANALYZED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW1 AREA 3	EPA-MW2 AREA 3	MW-B AREA 3	EPA-MW5 AREA 4
TITANIUM	1000	130	160	8200
VANADIUM	85	17	ND	460
YTTRIUM	67	2.4	ND	81
ZINC	130	21	40	310
MERCURY	ND	ND	ND	ND
ALUMINUM	58000	3200	2700	260000
MANGANESE	890	1100	900	1200
CALCIUM	25000	31000	140000	6200
MAGNESIUM	21000	6100	7200	31000
IRON	49000	7000	2500	200000
SODIUM	56000	14000	12000	3800
POTASSIUM	24000	4000	8700	23000

J - ESTIMATED VALUE
ND - NOT DETECTED
NA - NOT ANALYZED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW6 AREA 4	EPA-MW7 AREA 5	MW-2 AREA 5	MW-3 AREA 5
ARSENIC	69	ND	ND	760
BORON	NA	NA	NA	NA
BARIUM	430	190	110	36
BERYLLIUM	17	ND	ND	ND
CADMIUM	ND	ND	ND	ND
COBALT	56	17	ND	23
CHROMIUM	180	150	ND	ND
COPPER	89	24	ND	ND
MOLYBDENUM	ND	ND	ND	10
NICKEL	110	330	ND	ND
LEAD	31	ND	ND	ND
STRONTIUM	25	350	58	150

J - ESTIMATED VALUE
ND - NOT DETECTED
NA - NOT ANALYZED

TABLE 3.19 (CONTINUED)
GROUNDWATER SAMPLES
INORGANIC ANALYTICAL RESULTS - PPB

PARAMETER	EPA-MW6 AREA 4	EPA-MW7 AREA 5	MW-2 AREA 5	MW-3 AREA 5
TITANIUM	5600	720	38	35
VANADIUM	220	35	ND	ND
YTTRIUM	28	ND	ND	ND
ZINC	110	48	4.5	ND
MERCURY	ND	1.0	1.4	ND
ALUMINUM	57000	22000	1200	680
MANGANESE	1500	2600	120	47000
CALCIUM	3700	48000	6700	200000
MAGNESIUM	21000	13000	4300	62000
IRON	86000	19000	620	48000
SODIUM	1700	22000	3200	9400
POTASSIUM	16000	10000	2600	3000

J - ESTIMATED VALUE
ND - NOT DETECTED
NA - NOT ANALYZED

TABLE 3.20
FIELD PARAMETERS
CALDWELL SYSTEMS INC.
LENOIR, NORTH CAROLINA

Well Designation	Sample Number	pH (SU)	SPECIFIC CONDUCTANCE (umhos/cm at 25° C)	TEMPERATURE (°C)
MW-A	CS-424-MW	5.9	60	15.9
MW-B	CS-432-MW	5.7	180	15.7
MW-C	CS-423-MW	6.3	20	16.3
MW-2	CS-433-MW	5.4	80	17.0
MW-3	CS-436-MW	6.6	1400	12.0*
DW-1	CS-421-MW	5.7	200	16.5
DW-2	CS-428-MW	5.6	350	21.2
HAAS	CS-420-MW	6.5	220	18.0
EPA-MW1	CS-429-MW	6.5	280	18.0
EPA-MW2	CS-427-MW	5.7	230	22.0
EPA-MW3	CS-425-MW	6.1	200	18.3
EPA-MW4	CS-426-MW	5.7	220	17.6
EPA-MW5	CS-431-MW	5.6	50	17.5
EPA-MW6	CS-430-MW	6.0	30	18.2
EPA-MW7	CS-435-MW	6.0	400	11*
POTABLE	CS-434-MW	6.7	100	18.7
SEPTIC TANK	CS-422-MW	6.2	450	17.1

* - Value May Be Incorrect Due To Meter Malfunction

- WELL CONSTRUCTION DATA AND ANALYTICAL DATA SUMMARY TABLES
- SPRING SAMPLING DATA

Data Source: Well and spring sampling activities prior to USEPA's April 1991 well sampling activities. Data sources are as noted in the tables.

TABLE 1

GROUNDWATER WELLS - PHYSICAL DATA
CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

Well ID (1)	*Construction Material*	*Casing Diameter (in)*	*Static Groundwater Depth (ft.) May 23-25/90*	*Static Groundwater Elevation (ft.) May 23-25/90*	*Well Depth (ft, bls) May 23-25/90*	*Groundwater Depth (ft.) Sept /90*	*Top of Casing Elevation Sept /90*	*Well Depth (ft.) Sept /90*
CL-MW-01	PVC	2	49.3	1,539.10	85	48.27	1,587.38	85.42
CL-MW-02	PVC	2	6.9 (2)	1436.85 (2)	20.7	8.85	1,445.10	22.47
CL-MW-03	PVC	2	33.9 (2)	1386.58 (2)	51.3	35.9	1,421.54	52.05
CL-MW-04	PVC	2	18.38	1,516.14	25	21.72	1,536.33	28.65
CS-MW-09	Steel	6	51.20	1,573.36	--	52.05	1,618.01	104
CS-MW-10	Steel	6	87.35	1,537.21	--	88.15	1,615.47	>150
CS-MW-11	PVC	2	65.1	1,559.50	84 (2)	67.6	1,623.11	85.92
CS-PW-09	--	--	--	--	--	--	--	--

Notes:
1. Well ID by NUS Corporation for sampling event, May 23 - 25, 1990.
2. Measured on August 10, 1990.

Sources:
1. Final Report, Site Listing Inspection, Limited Scope Phase II, Caldwell County Landfill, Lenoir, Caldwell County, North Carolina, dated January 23, 1991, prepared by NUS Corporation.
2. Work Plan for the Sampling Investigation at the Caldwell Site, Lenoir, North Carolina, dated September 1990 and Associated Appendix A Field Health and Safety Plan, prepared by USEPA Region IV.

TABLE 2

GROUNDWATER WELLS - FIELD SAMPLING DATA
CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	May 23 - 25, 1990			*August 10, 1990*		
Well Number	*pH*	*Temperature (°C)*	*Conductivity (umhos/cm)*	*pH*	*Temperature (°C)*	*Conductivity (umhos/cm)*
CS-MW-09	6.1	23	224	--	--	--
CS-MW-10	5.1	20	93.3	--	--	--
CS-MW-11	6.1	11	95.5	--	--	--
CL-MW-01	12	21	--	10.14	22	210
CL-MW-04	--	--	--	5.47	20	393
CS-PW-09	6.9	19	361	--	--	--

Source:

1. Final Report, Listing Site Inspection, Caldwell Systems, Inc., Lenoir, Caldwell County, North Carolina, Volume I, dated October 31, 1990, prepared by NUS Corporation.

2. Final Report, Listing Site Inspection, Limited Scope Phase II, Caldwell County Landfill, Lenoir, Caldwell County, North Carolina, dated January 23, 1991, prepared by NUS Corporation.

TABLE 3

GROUNDWATER WELL AND SPRING SAMPLES - ANALYTICAL DATA
CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	Haas Property - Springs *September 1987 (1)*			Haas Property - Springs *August 1988 (2)*			Haas Property - Springs *May 23-25, 1990 (3)*	
Parameter	*CS-3*	*CS-4*	*CS-5*	*SW-03*	*SW-02/SW-02D*	*SW-01*	*CS-SW-02*	*CS-SW-03*
Methylene Chloride	ND	ND	ND	R	R/R	R	ND	ND
Acetone	ND	ND	ND	ND	R/ND	R	ND	ND
1,1-Dichloroethene	ND	2.7J	2.1J	6	8/6	ND	ND	ND
1,1-Dichloroethane	ND	1.3J	1.3J	1J	5/3J	ND	ND	ND
1,2-Dichloroethene (total)	ND	ND	ND	ND	ND/ND	ND	ND	ND
1,2-Dichloroethane	ND	8.1	7.7	13	15/15	ND	ND	5
1,1,1-Trichloroethane	ND	31	21	46	41/46	ND	ND	4J
Trichloroethene	ND	ND	ND	ND	1J/ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	1J	2J/2J	ND	ND	ND
Benzene	ND	ND	ND	--	-/-	--	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND/3J	ND	ND	ND
Toluene	1.2J	5J	1.7J	ND	ND/ND	ND	ND	ND
Methyl Ethyl Ketone	ND	ND	ND	--	--/--	--	ND	ND
Methyl Isobutyl Ketone	ND	ND	ND	--	--/--	--	ND	ND
Total Xylenes	ND	ND	ND	--	--/--	--	ND	ND
(VOCs) Unidentified Compounds/No.	--	--	--	--	--/--	--	ND	--
Benzoic Acid	--	--	--	--	--/--	--	ND	ND
Bis (2-Ethylhexyl) Phthalate	--	--	--	--	--/--	--	ND	ND
Dihydrodimethylindenecarboxylic Acid Ethylester	--	--	--	--	--/--	--	--	--
Buthyldiene bis (Dimethylethyl) Phenol	--	--	--	--	--/--	--	--	--
Bis (2-chloroethyl) Ether	--	--	--	--	--/--	--	ND	ND
(BNAs) Unidentified Compounds/No.	--	--	--	--	--/--	--	--	--
Aluminum	1,400	310	1,300	273	1,420/717	295	1,000	1,600
Arsenic	ND	ND	ND	ND	ND/ND	ND	ND	ND
Barium	ND	ND	ND	20	44/29	30	ND	ND
Beryllium	ND	ND	ND	ND	ND/ND	ND	ND	ND
Boron	NA	NA	NA	27	30/30	37	--	--
Cadmium	ND	ND	ND	ND	ND/ND	ND	ND	ND

TABLE 3

GROUNDWATER WELL AND SPRING SAMPLES - ANALYTICAL DATA
FACILITY CLOSURE PLAN
CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	Haas Property - Springs *September 1987 (1)*			Haas Property - Springs *August 1988 (2)*			Haas Property - Springs *May 23-25, 1990 (3)*	
Parameter	*CS-3*	*CS-4*	*CS-5*	*SW-03*	*SW-02/SW-02D*	*SW-01*	*CS-SW-02*	*CS-SW-03*
Calcium	ND	ND	ND	4,680	4,680/4,340	4,390	1,700	3,400
Chromium	ND	ND	ND	ND	ND/ND	ND	ND	ND
Cobalt	ND	ND	ND	ND	ND/ND	ND	ND	ND
Copper	ND	ND	ND	ND	ND/ND	ND	ND	ND
Iron	ND	ND	ND	252	1,920/1,250	677	ND	1,400
Lead	ND	ND	ND	ND	ND/ND	ND	ND	ND
Magnesium	ND	ND	ND	1,290	1,160/1,080	1,130	960	1,200
Manganese	ND	ND	ND	24	79/54	85	ND	30
Mercury	ND	ND	ND	--	-/-	--	0.20UR	0.20UR
Nickel	ND	ND	ND	ND	ND/ND	ND	ND	ND
Potassium	NA	NA	NA	1,030	2,520/1,900	1,460	ND	ND
Silicon	ND	ND	ND	14,400	13,900/13,500	11,600	--	--
Sodium	ND	ND	ND	5,060	5,010/4,960	5,280	3,600	4,700
Strontium	20	36	26	--	--/--	--	--	--
Tin	--	--	--	--	--/--	--	NA	NA
Titanium	69	16	44	--	--/--	--	--	--
Thallium	NA	NA	NA	--	--/--	--	--	--
Vanadium	ND	ND	ND	ND	15/7.8	ND	ND	ND
Zinc	ND	ND	ND	6.8	17/14	18	ND	ND
Zirconium	NA	NA	NA	--	--/--	--	--	--

TABLE 3

GROUNDWATER WELL AND SPRING SAMPLES - ANALYTICAL DATA
CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	Haas Property - Well	Haas Property-Well	Wells				
	September 1987 (1)	*May 23-25, 1990 (3)*	*May 23-25, 1990 (3)*				
Parameter	*CS-2*	*CS-PW-09*	*CS-MW-09*	*CS-MW-10*	*CS-MW-11*	*CL-MW-01*	*CL-MW-04*
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1J	ND	68	12J	ND	ND	ND
1,1-Dichloroethane	1.5J	ND	28	4J	ND	ND	ND
1,2-Dichloroethene (total)	ND	ND	8	ND	ND	ND	ND
1,2-Dichloroethane	1.5J	ND	4,400	13	ND	6,300	ND
1,1,1-Trichloroethane	ND	ND	720	81	ND	1,000	ND
Trichloroethene	ND	ND	4J	ND	ND	ND	ND
Tetrachloroethene	ND	ND	83	3J	ND	ND	ND
Benzene	ND	ND	2J	ND	ND	ND	ND
Toluene	1.1J	ND	25	ND	ND	1,200	ND
Methyl Ethyl Ketone	ND	ND	ND	ND	ND	ND	ND
Methyl Isobutyl Ketone	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND
(VOCs) Unidentified Compounds/No.	--	--	--	--	--	--	--
Benzoic Acid	--	ND	ND	ND	ND	ND	ND
Bis (2-Ethylhexyl) Phthalate	--	ND	ND	ND	ND	ND	70
Dihydrodimethylindenecarboxylic Acid Ethylester	--	--	6JN	--	--	--	--
Buthyldiene bis (Dimethylethyl) Phenol	--	--	60JN	--	--	--	--
Bis (2-chloroethyl) Ether	--	ND	--	ND	ND	33	ND
(BNAs) Unidentified Compounds/No.	--	2,000J/3	700J/14	--	--	2,000J/3	300J/4
4,4'-DDE (P,P'-DDE)	--	ND	ND	ND	ND	ND	ND
4,4'-DDT-(P,P'-DDT)	--	ND	ND	ND	ND	ND	ND
Aluminum	ND	ND	4,600	ND	27,000	2,200	44,000
Arsenic	ND	ND	ND	ND	ND	ND	ND
Barium	ND	ND	51	39	180	82	480
Beryllium	ND	ND	ND	ND	ND	ND	6
Boron	NA	NA	NA	NA	NA	NA	NA
Cadmium	ND	ND	ND	ND	ND	ND	ND

TABLE 3

GROUNDWATER WELL AND SPRING SAMPLES - ANALYTICAL DATA
FACILITY CLOSURE PLAN
CALDWELL SYSTEMS, INC. SITE
LENOIR, NORTH CAROLINA

	Haas Property-Well *September 1987 (1)*	Haas Property-Well *May 23-25, 1990 (3)*	Wells *May 23-25, 1990 (3)*				
Parameter	*CS-2*	*CS-PW-09*	*CS-MW-09*	*CS-MW-10*	*CS-MW-11*	*CL-MW-01*	*CL-MW-04*
Calcium	ND	15,000	5,000	18,000	20,000	120,000	37,000
Chromium	ND	ND	15	ND	24	12	86
Cobalt	ND	ND	11	ND	ND	ND	56
Copper	ND	ND	ND	ND	ND	ND	28
Iron	ND	2,700	37,000	ND	27,000	1,400	40,000
Lead	ND	14	25	ND	25	ND	ND
Magnesium	ND	1,700	1,400	5,000	5,400	430	11,000
Manganese	ND	52	580	26	760	22	2,300
Mercury	ND	0.20UR	0.20UR	0.20UR	0.20UR	ND	ND
Nickel	ND	30	ND	ND	32	ND	56
Potassium	NA	3,500	ND	ND	9,600	15,000	9,400
Sodium	ND	6,200	6,200	20,000	7,200	18,000	ND
Strontium	58	NA	NA	NA	NA	NA	NA
Tin	--	NA	NA	NA	NA	NA	NA
Thallium	NA	ND	ND	ND	ND	3UR	3UR
Vanadium	ND	ND	17	ND	19	11	95
Zinc	ND	ND	ND	ND	ND	ND	ND
Zirconium	NA	NA	NA	NA	NA	NA	NA
TEQ (ng/L)	--	NA	ND	ND	ND	NA	NA

Notes:
All results reported in µg/L.
ND = Not Detected.
J = Estimated value.
R = Compound detected in blank, value below acceptable reporting level.
N = Presumptive evidence of presence of material.
Only detected parameters shown.
U = Material was analyzed for but not detected. The number is the minimum quantitation limit.
R = QC indicates that the data is unusable. Compound may or may not be present.
NA = Not Analyzed.
TEQ = Toxicity Equivalence Value.
-- = Unknown if the compound was not analyzed or not detected.

Sources:
1. RCRA Case Development Investigation/Evaluation Caldwell Systems, Inc., dated January 29, 1988, prepared by USEPA Region IV.
2. Final Sampling Investigation Report, Caldwell Systems, Inc., Lenoir, North Carolina, dated November 16, 1988, prepared by PRC Environmental Management, Inc.
3. Final Report, Listing Site Inspection, Caldwell Systems, Inc., Lenoir, Caldwell County, North Carolina, Volume I, dated October 31, 1990 and Volume II, dated October 30, 1990, prepared by NUS Corporation.

APPENDIX F

HEALTH AND SAFETY PLAN

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F.1 INTRODUCTION

Field investigative activities to be performed at the Caldwell Systems, Inc. Site (Site), North Carolina, as part of the facility closure operations, may involve contact with soils and other materials contaminated with polychlorinated biphenyl (PCB), volatile organic compounds (VOC), base/neutral and acid extractable (BNA) organic compounds and metals. Existing data indicate that these contaminants may be present at varying concentrations and in varying areas of the Site. To ensure that exposure to potentially contaminated material by Site personnel is minimized, a Site-specific Health and Safety Plan (HASP) has been developed to ensure:

i) that Site personnel are not exposed to contamination that would be injurious or detrimental to their health or welfare;

ii) that the safety and welfare of the general public and the surrounding environment is not compromised by off-Site migration of contaminated materials; and

iii) compliance with applicable governmental and non-governmental (American Conference of Governmental Industrial Hygienists (ACGIH)) regulations and guidelines. In particular the amended rules of the Occupational Safety and Health Act (20 CFR 1910.120) govern all Site work.

All field activities carried out within the former operational area at this Site and/or involving contact with potentially contaminated materials, will be considered contaminated operations

requiring personal protective equipment (PPE). Similar activities occurring outside of the former operational area will be considered non-contaminated operations requiring a modified level of PPE from that for on-Site work.

The HASP detailed herein may be amended in the event of changing Site conditions. It is noted however, that any amendments to the approved plan will be conducted with the approval of the USEPA.

F.2 ON-SITE HEALTH AND SAFETY PLAN

F.2.1 OVERVIEW

The Health and Safety Plan specified herein will provide for a safe working environment for on-Site personnel, although it is noted that it is impossible to achieve a zero risk work environment. This Plan will also help minimize any potential adverse impact of the investigative activities on the general public or the surrounding environment.

All Site personnel will be required to become familiar with and comply with all provisions of this HASP. The Site specific HASP detailed here will be executed for work performed on Site. A copy of this plan will be maintained on Site at all times and will be reviewed by all on-Site employees.

F.2.2 SITE CHARACTERIZATION AND POTENTIALLY HAZARDOUS COMPOUNDS

The majority of all source materials that were believed to have contributed to the contamination of the various Site media have already been removed from the Site by the facility operator.

Section 4.0 of this report presents analytical data for various samples collected on or adjacent to the Site, including surficial soils, sub-surface soils, groundwater, surface water, on-Site sumps and underground tanks. A review of analytical data indicates that BNA

contamination in the uppermost one foot of soil at the Site is confined largely to the areas within the main operational area of the Site as defined by the baghouse area, former incinerator area and the old tank area within the confines of the Site security fence. The most frequently detected compounds were bis(2-ethylhexyl)phthalate, phthalic anhydride and phenol,

Previous investigations also indicate that some limited and localized PCB contamination exists in surficial soils. PCBs are suspected carcinogens and acceptable exposure levels in the air have been established by the American Conference of Governmental Industrial Hygienists (ACGIH). The eight-hour time weighted average (TWA) threshold limit value (TLV) established for PCBs is 0.5 milligram per cubic meter.

Analytical data indicate that the new farm sump and the ash tank sump contain a number of VOCs. Toluene and total xylenes were detected at the highest concentrations in both tanks. Both sumps also contained several BNAs. BNAs which were detected at the highest concentrations in the new tank farm sump and the ash tank sump were isophorone and bis(2-ethylhexyl)phthalate. In addition to VOCs and BNAs, various metals were also detected in both sump samples. It is understood, however, that the sump contents have been removed since these samples were taken. On the basis of USEPA's 1990 investigation, toluene is believed present at concentrations in excess of 100 ppm in at least one location in soils beneath the Old Tank Farm concrete slab. In addition, other organic compounds (namely PCBs and BNAs) may exist in soils beneath the slabs.

F.2.3 BASIS

The Occupational Safety and Health Administration (OSHA) Standards and Regulations contained in Title 29, Code of Federal Regulations, Parts 1910 and 1926 (29 CFR 1910 and 1926) including the amended sections in 29 CFR 1910.120 and the current applicable TLVs, as provided by the ACGIH, provide the basis for this health and safety program. Some of the specifications within this Section are in addition to OSHA regulations and reflect the positions of the USEPA, the National Institute for Occupational Safety and Health (NIOSH) and the United States Coast Guard (USCG) regarding procedures pertaining to safe operations at hazardous waste sites.

The safety and health of the public on-Site personnel and the protection of the environment will take precedence over cost and scheduling considerations for all project work. Conestoga-Rovers & Associates (CRA) will designate an on-Site individual as Site Safety Officer. Notification of the designated Site Safety Officer will be provided to the USEPA, by letter, within one week of the final approval of the facility closure plan. The on-Site Site Safety Officer shall be responsible for decisions regarding when work will be stopped or started for health and safety considerations.

F.3 HEALTH AND SAFETY PERSONNEL

A Site Safety Officer shall be on Site during all major remedial activities involving sampling, decontamination or excavation of contaminated material. The Site Safety Officer will report directly to a Certified Industrial Hygienist who shall be responsible for implementing and overviewing the Health and Safety on a part-time basis.

The CRA on-Site Safety Officer will be responsible for all decisions regarding operations and work stoppage due to health and safety considerations. The responsibilities of the Site Safety Officer for sampling and remedial activities will be as follows:

i) responsibility for implementation of the Health and Safety Plan at the initiation of Site work;

ii) conduct the initial briefing session for all on-Site personnel with regard to this Health and Safety Plan and other safety requirements to be observed during field sampling, including:
   a) potential hazards,
   b) personal hygiene principles,
   c) personnel protective equipment (PPE),
   d) respiratory protection equipment usage and fit testing, and
   e) emergency procedures dealing with fire and medical situations;

iii) review and modify (with USEPA approval) the Site Health and Safety Plan as more information becomes available concerning the hazardous materials involved, and review any monitoring reports;

iv) supervision and enforcement of safety equipment usage;

v) supervision and inspection of equipment cleaning;

vi) implement and conduct air monitoring program;

vii) personnel training in safety equipment usage and emergency procedures;

viii) monitoring of safety and health program under the direction of a certified industrial hygienist (CIH);

ix) has authority to suspend work activity due to unsafe working conditions;

x) informs workers of the nature of chemical exposure risk as required by Right-to-Know Law;

xi) responsible to recommend medical examination when worker appears to require it; and

xii) coordination of emergency procedures.

F.4 MEDICAL SURVEILLANCE

All Site personnel entering the Exclusion Zone or Contaminant Reduction Zone will be required to verify compliance with requirements detailed in 29CFR 1910.120 and 29 CFR1910.134 for medical surveillance.

Medical surveillance shall be subject to an employee's expected interval of time spent on Site, past hazardous work history and date of last medical examination. In accordance with 29 CFR 1910.120, if an employee wears a respirator on a routine basis or as part of routine activities for any part of 30 days during a year, then medical surveillance shall be provided to the minimum requirements specified by the examining physician.

Medical surveillance protocols shall be the physician's responsibility but shall, as a minimum, meet the requirements of OSHA Standard 29 CFR 1910.120 and 29 CFR 1910.134 for all personnel. This exam may include:

i) medical/occupation questionnaire with work history;
ii) full physical examination;
iii) screening audiometric test with otoscopic exam for wax;
iv) visual acuity measurement, including color perception;
v) pulmonary function test (Spirometry - FVC and FEV-1.0 second);
vi) resting EKG;

vii) chest X-ray (PA) read by Board Certified Radiologist (only when clinically indicated by other testing procedures);

viii) blood chemistry profile*;

ix) complete blood count with differential and platelet evaluation, including WBC, RBC, HGB, Hematocrit; and

x) urinalysis with microscopic examination.

All on-Site personnel requiring full medical surveillance shall be provided with medical surveillance within a reasonable time period prior to entering the Site, and at any time there is suspected to be excessive exposure to toxic chemicals or physical agents.

The Contractor shall maintain all medical surveillance records for a minimum period of thirty (30) years and shall make those records available to personnel or governmental agencies as specified in 29 CFR 1910.20 and 29 CFR 1913.10.

Interim medical surveillance will be completed if an individual exhibits poor health, symptoms of exposure, high extress responses due to on-Site activity or when accidental exposure to elevated concentrations of contaminants occurs.

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* Minimum Blood Chemistry Profile: Calcium, Phosphorous, Glucose, Blood Urea Nitrogen (BUN), Uric Acid, Cholesterol, Total Protein, Total Bilirubin, Direct Bilirubin, Alkaline Phosphatase, SGOT, SGPT, Sodium, Potassium, Chloride, Creatinine, Triglycerides, Albumin, Globulin, A/G Ratio, Lactic Acid Dehydrogenase (LDH) Serum Iron.

F.5 TRAINING

CRA will require that all sampling personnel, prior to entering the Site, complete training sessions in accordance with 29 CFR 1910.120. This training shall consist of a minimum of 40 hours instruction off Site (with annual refresher courses) and three days of actual field inspection under direct supervision. Each employer will maintain documentation stating that their on-Site personnel have complied with this regulation.

Prior to commencing Site activities, a Site-specific initiation session will be conducted. This session will be used to instruct the on-Site personnel as to what the potential Site hazards are, level of PPE required, Site-specific requirements, and the basics of the Health and Safety Plan. At this session, all on-Site personnel will be questioned as to whether they have the 40 hours of training required in accordance with 29 CFR 1910.120. All personnel who attend this session will be required to sign a Training Acknowledgement Form. An example of this form is presented in Attachment 1.

All personnel assigned to or entering the Site shall complete Site specific training or refresher sessions. Training and refresher sessions shall ensure that all personnel are capable of using, and familiar with, safety, health, respiratory and protective equipment and with the safety and security procedures required for this Site. The training session shall be completed by the Site Safety Officer or other qualified professional.

The Site-specific training program shall include the following items:

i) names and personnel responsible for Site health and safety;

ii) Site-specific potential hazards;

iii) use of PPE, including proper donning and doffing procedures;

iv) work practices by which the employee can minimize risks from these potential hazards;

v) safe use of engineering controls and on-Site equipment;

vi) discussion and completion of medical surveillance requirements and recognition of symptoms associated with exposure to hazards;

vii) Site control methods;

viii) on and off-Site contingency plans;

ix) decontamination procedures;

x) Site-specific standard operation procedures;

xi) delineation between work zones;

xii) use of the buddy system;

xiii) scope of the intended works for the project; and

xiv) review on-Site communications and appropriate hand signals between personnel working in the Exclusion and/or Contaminant Reduction Zone.

The Site Safety Officer shall be responsible for ensuring that personnel not successfully completing the required training are not permitted to enter the Site to perform work.

The Contractor shall implement a hazard communication ("Right-to-Know") program in accordance with 29 CFR 1910.1200.

F.6 RESPIRATOR PROGRAM

Prior to arriving at the Site, all on-Site personnel will have received training in the use of, and have been fit tested for, air-purifying respirators.

Personnel working on-Site shall be required to wear respiratory protection as determined by air monitoring and as instructed by the Site Safety Office. As a minimum, all personnel shall wear full face-piece air purifying respirators when working in the Exclusion Zone (see Section F.11).

F.7 WORK AREAS/SITE CONTROL

Specific work areas shall be delineated by fence or flagged line as outlined below:

a) Exclusion Zone (EZ) - This zone shall include all areas where contaminated liquids, soils or other materials are to be pumped, excavated, or handled, and during sampling activities, all areas where contaminated equipment or personnel travel.

The EZ shall be clearly delineated in the field prior to commencing Site work, by temporary fencing or caution flagging with warning signs spaced around the perimeter of the Zone warning of a hazardous work area;

b) Contaminant Reduction Zone (CRZ) - This zone will occur at the interface of the EZ and Clean Zone and shall provide for: the transfer of construction materials and equipment to the EZ, the decontamination of equipment which has come into contact with potentially contaminated materials prior to leaving the EZ, the removal and temporary storage of disposable PPE, the decontamination of personnel and clothing prior to entering the Clean Zone and for the physical segregation of the Clean Zone and EZ; and

c) Clean Zone (CZ) - This area is the portion of the Site defined as being the area outside the zone of significant air, soil or surface water contamination. The Clean Zone shall be clearly delineated and

procedures implemented to prevent active or passive migration of contamination from the work Site. The function of the Clean Zone includes:

i) An entry area for personnel, material and equipment to the Exclusion Zone;

ii) An exit area for decontaminated personnel, materials and equipment from the Exclusion Zone;

iii) The housing of Site-special services;

iv) A storage area for clean safety and work equipment; and

v) First-aid kit.

F.8 EMERGENCY AND FIRST AID EQUIPMENT AND SUPPLY

The safety equipment listed below shall be located and maintained within the Clean Zone in appropriate locations as directed by the Site Safety Officer.

a) portable emergency eye wash;

b) two twenty pound ABC type dry chemical fire extinguishers;

c) two self-contained-air full-face respirators; and

d) one hand-held emergency siren.

F.9 EMERGENCY CONTINGENCY AND RESPONSE PLAN

F.9.1 Off-Site Contingency Plan

Prior to commencing work involving the sampling, excavation, handling and disposal of potentially contaminated material, the Site Safety Officer will coordinate the development of an off-Site emergency contingency plan. This plan will provide adequate plans for an immediate response to a serious Site occurrence such as explosion, fire or migration of significant quantities of toxic or hazardous material from the Site into adjacent public areas.

A coordination meeting shall be held, at the beginning of field activities. The meeting shall identify the Emergency response coordinator through whom all information and coordination will occur in the event of an incident. Plans shall be developed, for:

i) fire fighting procedures;
ii) transport of injured personnel to medical facilities; and
iii) priority transportation routes;

The Hospital and hospital route will be identified prior to commencing activities. A route map to the hospital will be posted in conspicuous areas.

Techniques and recommended procedures for immediate first aid emergency response will be developed with the local medical facilities.

F.9.2 On-Site Contingency Plan

a) In the event of injury to on-Site personnel or contact with hazardous materials, the following protocol shall be followed:

   i) in the event of injury, notify the Site Safety Officer;

   ii) contact the Hospital and describe the injury;

   iii) decontaminate personnel and administer appropriate emergency first aid; and

   iv) transport personnel to the medical facility identified above;

b) Fire extinguishers shall be maintained in strategic locations within the Site to combat localized fires. Personnel shall be trained in fire fighting procedures and shall be equipped with self-contained air when involved in such operations; and

c) In the event of significant release of toxic or hazardous vapors from any container or excavation, the source of such vapors shall be immediately backfilled or covered with fill. Equipment operators shall utilize self-contained air respirators during such operations. Alternate

plans of contaminant removal will be developed and submitted to the Engineer prior to recommencing work in the area.

F.10 PERSONAL SAFETY AND RELATED EQUIPMENT

All on-Site personnel shall be equipped with personal safety equipment and protective clothing appropriate for the hazardous material being handled and the nature of work being completed. All safety equipment and protective clothing shall be kept clean and well-maintained.

Safety equipment and apparel as required for work within the Exclusion Zone shall consist of:

a) Full disposable outerwear including tyvek type coveralls and nitrile/butyl gloves;

b) Hardhats;

c) Safety boots;

d) Rubber or latex overboots; and

e) Full face-piece respirators with dual organic vapor, and particulate filters (should air monitoring data discussed in Section F.11, indicate their use).

In addition to the above-noted safety equipment all personnel directly handling liquids, shall be equipped with viton gloves and upgrade to Saranex-type disposable coveralls.

Additional protective equipment usage guidelines to be implemented include:

a) All prescription eyeglasses in use on the Site will be safety glasses. Contact lenses shall not be permitted;

b) All disposable or reusable gloves worn on the Site shall be neoprene gloves (viton gloves where PCBs are suspected) with latex or N-Dex nitrile surgical gloves worn underneath;

c) During periods of respirator usage in contaminated areas, respirator filters shall be changed daily or upon breakthrough, whichever occurs first;

d) Footwear used on Site will be work boots, and will be covered by rubber or latex overboots when entering or working in the Exclusion Zone or Contaminant Reduction Zone;

e) On-Site personnel unable to pass a respirator fit test shall not enter or work in the Exclusion Zone or Contaminant Reduction Zone;

f) All on-Site personnel shall wear an approved hardhat when present in areas where physical hazards are present such as heavy equipment, overhead low beams; near trenches or excavations;

g) All PPE work on Site shall be decontaminated at the end of each work day. The Site Safety Officer shall be responsible for ensuring individuals decontaminate PPE before reuse; and

h) Duct tape shall be used to ensure that disposable coveralls and gloves are tightly secured when personnel are working within contaminated zones.

F.11 RESPIRATORY PROTECTION

Respiratory protection, as appropriate for all on-Site personnel, shall be mandatory during all on-Site sampling activities. As a minimum, all on-Site personnel shall be required to wear full face-piece air purifying respiratory protection when working in the Exclusion Zone.

Levels of respiratory protection have been chosen consistent with potential airborne hazards. The selection of appropriate protection is based upon the potential presence of compounds with the lowest recommended threshold limit value.

In the absence of additional air monitoring information, the following levels of respiratory protection shall be required when working in the Exclusion Zone:

HNu (or equivalent) Organic Vapor Reading Above Background	*Level of Respiratory Protection Required*
0 - 5 ppm	A half or full face air purifying respirator must be available
5 - 25 ppm	A half or full face respirator must be used
>25 ppm	Supplied air system or suspend activities

The Site Safety Officer shall be responsible for implementing, maintaining and enforcing the respirator program.

On-Site personnel unable to pass a respirator fit test will not be permitted to enter or work in the Exclusion Zone or Contaminant Reduction Zone.

Work will be stopped and the work area will be allowed to vent if monitoring indicates that any of the following conditions exist:

i) toxic gases and particulates are present at concentrations which present Immediate Danger to Life and Health (IDLH) conditions, or in excess of the protection factor afforded by the air purifying respirator (whichever is lower); or

ii) the oxygen content of the air is less than 19.5 percent.

Periodic air monitoring data will be obtained to correlate with total organic vapors from which the level of respiratory protection may be adjusted.

F.12 PERSONAL HYGIENE

The Site Safety Officer shall be responsible for, and ensure that all personnel performing or supervising remedial work within a hazardous work area, or exposed or subject to exposure to hazardous chemical vapors, liquids, or contaminated solids, observed and adhere to the personal hygiene-related provisions of this section.

On-Site personnel found to be disregarding the personal hygiene-related provisions of this plan will be barred from the Site.

The following equipment/facilities shall be provided for the personal hygiene of all on-Site personnel during sampling operations:

a) Suitable disposable outerwear, gloves, and footwear on a daily or as-needed basis for the use of on-Site personnel;

b) Contained storage and disposal for used disposable outerwear; and

c) washbasins ;

The following regulations for personnel working within the Exclusion Zone will also be enforced:

a) On-Site personnel shall wear disposable outerwear and gloves at all times whenever entering or working in the Exclusion Zone or Contaminant Reduction Zone;

b) Used disposable outerwear shall not be reused, and when removed, will be placed inside disposable containers provided for that purpose;

c) Smoking will be prohibited except in a designated smoking area;

d) Eating and drinking shall be prohibited except in the designated lunch or break area;

e) Soiled disposable outerwear shall be removed prior to entering the lunch area, and prior to cleansing hands;

f) On-Site personnel shall thoroughly cleanse their hands and other exposed areas before entering the smoking or lunch area;

F.13 CONTAMINANT MIGRATION CONTROL

To prevent the migration of potentially contaminated material both on Site and off Site, vehicle travel shall be restricted.

All vehicles and equipment used in the Exclusion Zone shall be decontaminated in the Contaminant Reduction Zone prior to leaving the Site and for any work outside of fenced areas. The Site Safety Officer will certify that each piece of equipment has been decontaminated prior to removal from the Site.

Decontamination shall involve the thorough cleaning of equipment with a high pressure steam cleaning unit, and shall be performed on a decontamination pad to be constructed on Site. Decontamination wash waters shall be collected and contained in an on-Site storage tank. Wash waters will be sampled prior to discharge to the local POTW.

Personnel engaged in vehicle decontamination shall wear protective equipment including disposable clothing and gloves.

F.14 PARTICULATE EMISSION CONTROL

During sampling and excavation activities, a dust control program shall be implemented and strictly enforced to minimize the generation and potential off-Site migration of fugitive particulate emissions. Excavations and excavated material shall be kept moist while uncovered due to Site activities. Decontamination wash waters may be used to keep excavated materials moist.

All roadways, designated work areas and other possible sources of dust generation shall be controlled by application of water as required.

F.15 AIR MONITORING

During the progress of active work, air quality will be monitored in and around each active work location. Monitoring will be conducted on a daily basis and additionally as required by special or work-related conditions.

The daily monitoring program will consist of monitoring with a HNu photoionization detector or equivalent for volatile organic vapors. An explosimeter and oxygen meters will be used for combustible atmospheres and ambient oxygen concentrations in areas where explosive or oxygen deficient atmospheres may be suspected.

Immediately upon identifying elevated levels of organic vapors (greater than 100 parts per million) and/or explosive limits (greater than 20 percent of the Lower Explosive Limit), reduced oxygen concentrations (less than 19.5 percent oxygen), the air monitoring results shall be reported to the Site Safety Officer, who will determine when operations shall be shut down and restarted. Air will be monitored at the downwind side of the work zone of concern as well as the downwind Site perimeter to identify any potential impact on the general public and surrounding environment.

The results of the air monitoring program will be recorded in a hard cover log book, which will be maintained on Site by the Site Safety Officer.

F.16 POSTED REGULATIONS

"No Smoking" signs shall be posted at the Site entrance and on the perimeter of the Exclusion Zone in addition to signs which state "Warning, Hazardous Work Area, Do Not Enter Unless Authorized". In addition, a notice directing visitors to the office will be posted at the Site entrance.

Safety regulations and safety reminders will be posted at conspicuous locations throughout the Site.

F.17 SAFETY MEETINGS

The Site Safety Officer will conduct daily pre-work safety meetings which will be mandatory for all Site personnel. The meetings will review ongoing safety issues and protocols, and will examine new Site conditions as they are encountered.

Additional safety meetings will be held on an as-required basis.

Should any unforeseen or Site-peculiar safety related factor, hazard, or condition become evident during the performance of work at this Site, it will be brought to the attention of the Engineer in writing as quickly as possible, for resolution. In the interim, prudent action shall be taken to establish and maintain safe working conditions and to safeguard employees, the public, and the environment.

ATTACHMENT 1

TRAINING ACKNOWLEDGEMENT FORM

TRAINING ACKNOWLEDGEMENT FORM

Please Print:

NAME: _____

ADDRESS: _____

SOCIAL SECURITY NUMBER: _____

EMPLOYER: _____

JOB SITE: _____

I have attended and understood the mandatory Site-specific initiation session for the above-referenced job site. This program referenced the following topics:

i) known potential hazards on Site;

ii) level of personal protection equipment required;

iii) emergency procedures for the Site; and

iv) have received explanation of the basics of the Health and Safety Plan.

I further confirm that I have the required 40 hours of training to comply with 29 CFR 1910.120 and have a respirator for which I have been fit tested.

_____
Signature

APPENDIX G

QUALITY ASSURANCE PROJECT PLAN

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G.1.0 QUALITY ASSURANCE PROJECT PLAN

G.1.1 OVERVIEW

This Quality Assurance Project Plan (QAPP) presents the policies, organization, objectives, functional activities and specific Quality Assurance (QA) and Quality Control (QC) activities designed to achieve the specific data quality goals associated with the investigative work at the Caldwell Systems, Inc. (CSI) Facility located in Lenoir, North Carolina. The location of the Site is shown on Figure 2.1 of the CSI Work Plan.

G.2.0 PROJECT DESCRIPTION

G.2.1 BACKGROUND

Detailed background information and results of previous studies at the Site have been presented in Sections 2.0, 3.0 and 4.0 of the CSI Work Plan.

G.2.2 SCHEDULE

The start of project field activities will be determined by the date upon which approval of this and supporting documentation is granted by the United States Environmental Protection Agency, Región IV (USEPA). Details of the project schedule are presented in Section 8.0 of the CSI Work Plan.

G.2.3 SAMPLING PROGRAM

The sampling program to be implemented as part of the Facility Closure will include the collection and analysis of soil, liquid and solid waste samples. The soil samples will be collected and analyzed for soil delineation purposes. The liquid and solid waste samples will be collected for waste characterization purposes. Details regarding the sampling procedures and protocols are provided in Section 6.0 of the CSI Work Plan.

G.3.0 PROJECT ORGANIZATION AND RESPONSIBILITY

Conestoga-Rovers & Associates (CRA), is responsibile for all phases of the facility closure at the CSI Site. CRA will perform or supervise all field investigations and, using information compiled from this program, develop and refine the design for Site closure. All reports based on investigative work activities will be produced by CRA.

The project laboratory (to be named later), as analytical subcontractor to CRA, will perform all chemical analyses of samples collected for the facility closure.

All firms will provide project management as appropriate to their responsibilities. CRA will provide administrative oversight and Quality Assurance/Quality Control (QA/QC) for all deliverables. All final project deliverables will be issued by CRA.

Figure G.3.1 presents the organizational chart for the project. In addition, the functional responsibilities of each of the key technical personnel will be as follows:

B. Clegg - Project Manager

- managerial and technical guidance to CRA staff
- day-to-day project management
- managerial guidance to technical group
- technical representation at meetings

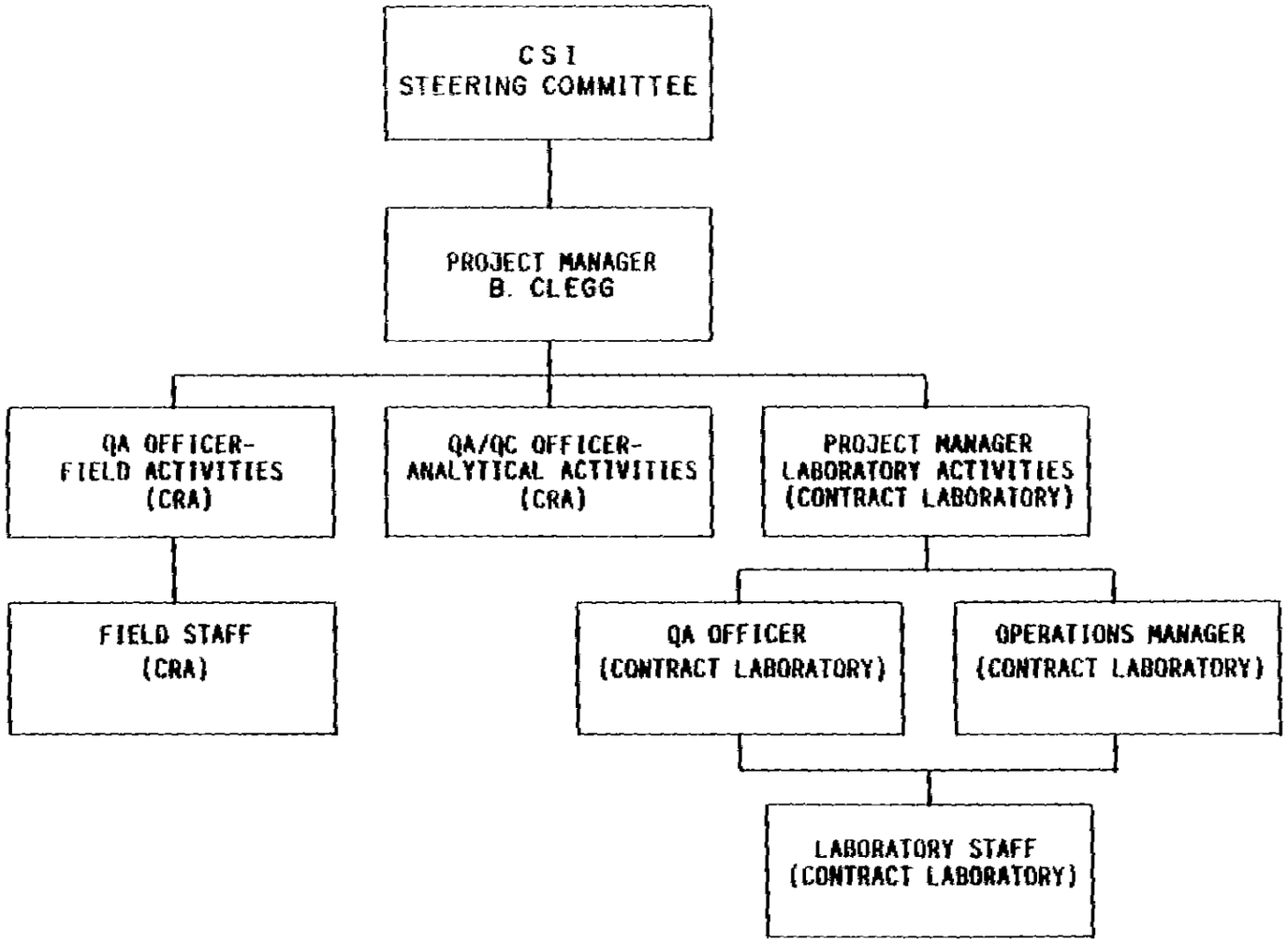

figure G.3.1

PROJECT ORGANIZATION
CALDWELL SYSTEMS, INC. SITE
Lenoir, North Carolina

CRA

4154(3) – FEB. 25, 92 – REV. 0 – (C)

- liaison between technical group and PRPs
- liaison with USEPA, State and Local agencies
- preparation and review of reports and other documentation.

_____ - Quality Assurance Officer - Analytical Activities, CRA

- overview of laboratory activities
- decide laboratory data corrective action
- analytical data assessment and validation
- preparation and review of reports and other documentation

_____ - Quality Assurance Officer - Field Activities, CRA

- management of field activities and field QA/QC
- data assessment
- preparation and review of reports and other documentation
- technical representation of field activities

_____ - Laboratory Project Manager, Project Laboratory

- ensures all resources of the project laboratories are available on an as-required basis
- overview final analytical report

_____ - Quality Assurance Officer, Project Laboratory

- overview laboratory quality assurance
- overview QA/QC documentation
- conduct detailed data review
- decide laboratory corrective actions, if required

- technical representation of laboratory QA procedures

_____ - Sample Custodian, Project Laboratory

- receive and inspect the incoming sample containers
- record the condition of the incoming sample containers
- sign appropriate documents
- verify chain-of-custody and its correctness
- notify laboratory manager and laboratory supervisor of sample receipt and inspection
- assign a unique identification number and customer number, and enter each into the sample receiving log
- with the help of the laboratory manager, initiate transfer of the samples to appropriate lab sections
- control and monitor access/storage of samples and extracts

Primary responsibility for project quality rests with CRA's QA Officer. Ultimate responsibility for project quality rests with CRA's Project Manager. Independent quality assurance will be provided by the Laboratory Project Manager and QA Officer prior to release of all data to CRA.

G.4.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

The overall QA objective is to develop and implement procedures for field sampling, chain-of-custody, laboratory analyses and reporting that will provide accurate data. Specific procedures to be used for sampling, chain-of-custody, calibration, laboratory analysis, reporting, quality control, audits, preventive maintenance and corrective actions are presented in other sections of this QAPP.

Data quality objectives (DQOs) have been established in accordance with the USEPA guidance document entitled "Data Quality Objectives for the RI/FS Process", dated March 25, 1986, to ensure that the database developed during the Site investigation meets the objectives and quality necessary for its intended use, namely Facility Closure activities. The DQOs required for the Facility Closure shall be Level III.

G.4.1 LEVEL OF QA EFFORT

To assess the quality of data resulting from the field sampling program, rinsate blank samples and matrix spike samples will be taken (where appropriate) and submitted to the analytical laboratory.

For all field samples collected, for delineation purposes, matrix spike and matrix spike duplicate samples will be analyzed at a minimum frequency of 1 in 20 for each. Rinsate blank samples will be

minimum frequency of 1 in 20 for each. Rinsate blank samples will be submitted at a frequency of one per ten soil samples submitted to the laboratory or at least once per day of sampling equipment cleanings. No quality control samples will be collected for the samples collected for characterization purposes.

The sampling and analysis program is summarized in Table G.4.1 and Table G.4.2, which list the specific parameters to be measured, the number and frequency of sampling, and the level of QA effort required.

Blank samples will be analyzed to check procedural contamination and/or ambient conditions and/or sample container contamination at the Site that may cause sample contamination.

G.4.2 ACCURACY, PRECISION AND SENSITIVITY OF ANALYSES

The fundamental QA objective with respect to the accuracy, precision, and sensitivity of analytical data is to achieve the QC acceptance criteria of each analytical protocol. The sensitivities required for these organic and inorganic analyses will be at least the targeted detection limits listed in Table G.4.3. It should be noted that these limits are targeted detection limits.

The method(s) precision (relative percent difference of duplicate analyses) will be determined from matrix spike/matrix spike

TABLE G.4.1

SUMMARY OF SAMPLING AND ANALYSIS PROGRAM
SOIL DELINEATION
CSI SITE
LENOIR, NORTH CAROLINA

Sample Matrix	*Laboratory Parameters*	*Investigative Samples*	*QA SAMPLES*		*Total*
			Rinsate Blanks	*Matrix Spike*	
Soils (Areal Delineation)	TCL PCB	11	2	1	14
Soils (Vertical Delineation)	TCL PCB	5	1	1	7
Soils (Septic Tile Field)	TCL VOC	6	1	1	8
	TCL BNA	6	1	1	8
	TCL PCB	6	1	1	8
Soils (Sub Concrete Delineation)	TCL VOC	6	1	1	8
	TCL BNA	6	1	1	8
	TCL PCB	6	1	1	8

TABLE G.4.2
SUMMARY OF SAMPLING AND ANALYSIS PROGRAM
WASTE CHARACTERIZATION
CSI SITE
LENOIR, NORTH CAROLINA

Sample Matrix	*Laboratory Parameters*	*Investigative Samples*	*Total*
Concrete Composites (Concrete Plant Slabs)	TCL PCB	4	4
	TCLP VOC	3	3
	TCLP BNA	3	3
	TCLP Metals	3	3
	TCLP Peticides	3	3
	TCLP Herbicides	3	3
	Reactivity	3	3
	Corrosivity	3	3
	Ignitability	3	3
Bulk Waste Composites (Site Structures)	TCL PCB	2	2
	TCLP VOC	2	2
	TCLP BNA	2	2
	TCLP Metals	2	2
	TCLP Peticides	2	2
	TCLP Herbicides	2	2
	Reactivity	2	2
	Corrosivity	2	2
	Ignitability	2	2
Liquid Composites (Sump Liquids)	TCL VOC	1	1
	TCL BNA	1	1
Soil Composites (Drummed Soils)	TCL PCB	1	1
	TCLP VOC	1	1
	TCLP BNA	1	1
	TCLP Metals	1	1
	TCLP Peticides	1	1
	TCLP Herbicides	1	1
	Reactivity	1	1
	Corrosivity	1	1
	Ignitability	1	1
Liquids (Drummed Well Construction/Development Waters)	TCL VOC	1	1
	TCL BNA	1	1
Liquids (Tanked Materials)	TCL VOC	5	5
	TCL BNA	5	5

TABLE G.4.3

TARGETED DETECTION LIMITS
CSI SITE
LENOIR, NORTH CAROLINA

Parameter		*Method of Analysis*	*Targeted Detection Limits*	
			Liquid (µg/L)	*Solid (µg/kg)*
Volatile Organic Compounds		SW-846 8240		
Cas No.	*Compound*			
67-64-1	Acetone		10	10
71-43-2	Benzene		5	5
75-27-4	Bromodichloromethane		5	5
75-25-2	Bromoform		5	5
74-83-9	Bromomethane		10	10
78-93-3	Butanone		10	10
75-15-0	Carbon disulfide		5	5
56-23-5	Carbon tetrachloride		5	5
108-90-7	Chlorobenzene		5	5
75-00-3	Chloroethane		10	10
67-66-3	Chloroform		5	5
74-87-3	Chloromethane		10	10
10061-01-15	Cis-1,3-dichloropropene		5	5
124-48-1	Dibromochloromethane		5	5
75-35-3	1,1-Dichloroethane		5	5
107-06-2	1,2-Dichloroethane		5	5
75-35-4	1,1-Dichloroethene		5	5
540-59-0	1,2-Dichloroethene (total)		5	5
78-87-5	1,2-Dichloropropane		5	5
100-41-4	Ethylbenzene		5	5
591-78-6	2-Hexanone		10	10
75-09-2	Methylene chloride		5	5
108-10-1	4-Methyl-2-pentanone		10	10
100-42-5	Styrene		5	5
79-34-5	1,1,2,2-Tetrachloroethane		10	10
127-18-4	Tetrachloroethene		5	5
108-88-3	Toluene		5	5
10061-02-6	Trans-1,3-dichloropropene		5	5
71-55-6	1,1,1-Trichloroethane		5	5
79-00-5	1,1,2-Trichloroethane		5	5
79-01-6	Trichloroethene		5	5
108-05-4	Vinyl acetate		10	10
75-01-4	Vinyl chloride		10	10
1330-20-7	Xylenes (total)		5	5

TABLE G.4.3

TARGETED DETECTION LIMITS
CSI SITE
LENOIR, NORTH CAROLINA

Parameter	*Method of Analysis*	*Targeted Detection Limits*	
		Liquid (µg/L)	*Solid (µg/kg)*
Base/Neutral Compounds	SW-846 8270		
Cas No.	*Compound*		
83-32-9	Acenaphthene	10	330
208-96-8	Acenaphthylene	10	330
120-12-7	Anthracene	10	330
56-55-3	Benzo(a)anthracene	10	330
50-32-8	Benzo(a)pyrene	10	330
205-99-2	Benzo(b)fluoranthene	10	330
191-24-2	Benzo(g,h,i)perylene	10	330
207-08-9	Benzo(k)fluoranthene	10	330
100-51-6	Benzyl alcohol	10	330
111-91-1	Bis(2-chloroethoxy)methane	10	330
111-44-4	Bis(2-chloroethyl)ether	10	330
108-60-1	Bis(2-chloroisopropyl)ether	10	330
117-81-7	Bis(2-ethylhexyl)phthalate	10	330
85-68-7	Butylbenzylphthalate	10	330
101-55-3	4-Bromophenylphenyl ether	10	330
106-47-8	4-Chloroaniline	10	330
91-58-7	2-Chloronaphthalene	10	330
7005-72-3	4-Chlorophenyl phenyl ether	10	330
218-01-9	Chrysene	10	330
53-70-3	Dibenz(a,h)anthracene	10	330
132-64-9	Dibenzofuran	10	330
95-50-1	1,2-Dichlorobenzene	10	330
541-73-1	1,3-Dichlorobenzene	10	330
106-46-7	1,4-Dichlorobenzene	10	330
91-94-1	3,3'-Dichlorobenzidine	50	1,600
84-66-2	Diethylphthalate	10	330
131-11-3	Dimethylphthalate	10	330
84-74-2	Di-n-butyphthalate	10	330
117-84-0	Di-n-octylphthalate	10	330
121-14-2	2,4-Dinitrotoluene	10	330
606-20-2	2,6-Dinitrotoluene	10	330
206-44-0	Fluoranthene	10	330
86-73-7	Fluorene	10	330
118-74-1	Hexachlorobenzene	10	330

TABLE G.4.3

TARGETED DETECTION LIMITS
CSI SITE
LENOIR, NORTH CAROLINA

Parameter	*Method of Analysis*	*Targeted Detection Limits*	
		Liquid (µg/L)	*Solid (µg/kg)*
Cas No.	*Compound*		
87-68-3	Hexachlorobutadiene	10	330
77-47-4	Hexachlorocyclopentadiene	10	330
67-72-1	Hexachloroethane	10	330
193-39-5	Indeno(1,2,3-cd)pyrene	10	330
78-59-1	Isophorone	10	330
91-57-6	2-Methylnaphthalene	10	330
91-20-3	Naphthalene	10	330
88-74-4	2-Nitroaniline	50	1,600
99-09-2	3-Nitroaniline	50	1,600
100-01-6	4-Nitroaniline	50	1,600
98-95-3	Nitrobenzene	10	330
621-64-7	N-Nitroso-di-n-propylamine	10	330
86-30-6	N-Nitrosodiphenylamine (diphenylamine)	10	330
85-01-8	Phenanthrene	10	330
129-00-0	Pyrene	10	330
120-82-1	1,2,4-Trichlorobenzene	10	330
ACID COMPOUNDS	SW-846 8270		
65-85-0	Benzoic acid	50	1,600
59-50-7	4-Chloro-3-methylphenol	10	330
95-57-8	2-Chlorophenol	10	330
120-83-2	2,4-Dichorophenol	10	330
105-67-9	2,4-Dimethylphenol	10	330
51-28-5	2,4-Dinitrophenol	50	1,600
534-52-1	4,6-Dinitro-2-methylphenol	50	1,600
95-48-7	2-Methylphenol	10	330
106-44-5	4-Methylphenol	10	330
88-75-5	2-Nitrophenol	10	330
100-02-7	4-Nitrophenol	50	1,600
87-86-5	Pentachlorophenol	50	1,600
108-95-2	Phenol	10	330
95-95-4	2,4,5-Trichlorophenol	10	330
88-06-2	2,4,6-Trichlorophenol	10	330

TABLE G.4.3

TARGETED DETECTION LIMITS FOR
CSI SITE
LENOIR, NORTH CAROLINA

Parameter		*Method of Analysis*	*Targeted Detection Limits*	
Cas No.	*Compound*		*Liquid (µg/L)*	*Solid (µg/kg)*
PCBs		SW-846 8080		
12674-11-2	Aroclor 1016		0.5	80
11104-28-2	Aroclor 1221		0.5	80
11141-16-5	Aroclor 1232		0.5	80
53469-21-9	Aroclor 1242		0.5	80
12672-29-6	Aroclor 1248		0.5	80
11097-69-1	Aroclor 1254		1.0	160
11096-82-5	Aroclor 1260		1.0	160

	Method of Analyses[1]		*Regulatory Limit*	*Method Detection Limit*
Ignitability	SW-846	1010	140°F	NA[2]
Corrosivity	SW-846	9040	$2 \geq pH \leq 12.5$ SU	NA[2]
	SW-846	1110	>6.35 mm/year	NA[2]
Reactivity - cyanide	SW-846	7.3.3.2	250 mg/kg	10 mg/kg
Reactivity - sulfide	SW-846	7.3.4.2	500 mg/kg	50 mg/kg

TABLE G.4.3

TARGETED DETECTION LIMITS
CSI SITE
LENOIR, NORTH CAROLINA

		Method of Analyses[3]		*Regulatory Limit (mg/kg)*	*Method Detection Limit*[4] *(mg/kg)*
Extraction (TCLP):		SW846	1311		
Analyses:	**Metals (TCLP)**				
	Arsenic	SW846	6010	5.0	0.5
	Barium	SW846	6010	100.0	0.2
	Cadmium	SW846	6010	1.0	0.01
	Chromium	SW846	6010	5.0	0.01
	Lead	SW846	6010	5.0	0.1
	Mercury	SW846	7470	0.2	0.002
	Selenium	SW846	6010	1.0	0.5
	Silver	SW846	6010	5.0	0.01
	Pesticides (TCLP)	SW846	8080		
	Chlordane			0.03	0.0025
	Endrin			0.02	0.0005
	Heptachlor			0.008	0.00025
	(Heptachlor-epoxide)			0.008	0.00025
	Lindane			0.4	0.00025
	Methoxychlor			10.0	0.0025
	Toxaphene			0.5	0.0025
	Herbicides (TCLP)	SW846	8150		
	2,4-D			10.0	0.5
	2,4,5-TP (Silvex)			1.0	0.05
	Volatiles (TCLP)	SW846	8240		
	Benzene			0.5	0.005
	Carbon tetrachloride			0.5	0.005
	Chlorobenzene			100.0	0.005
	Chloroform			6.0	0.005
	1,2-Dichloroethane			0.5	0.005
	1,1-Dichloroethene			0.7	0.005
	Methyl ethyl ketone			200.0	0.01
	Tetrachloroethene			0.7	0.005
	Trichloroethene			0.5	0.005
	Vinyl chloride			0.2	0.01

TABLE 4.3

TARGETED DETECTION LIMITS
CSI SITE
LENOIR, NORTH CAROLINE

		Method of Analyses[3]	*Regulatory Limit (mg/kg)*	*Method Detection Limit*[4] *(mg/kg)*
Analyses:	**Semi-Volatiles (TCLP)**	SW846 8270		
	o-Cresol (2-Methylphenol)		200.0	0.01
	m & p-Cresol (3 & 4-Methylphenol)[5]		200.0	0.01
	Cresol (total)		200.0	0.01
	1,4-Dichlorobenzene		7.5	0.05
	2,4-Dinitrotoluene		0.13	0.05
	Hexachlorobenzene		0.13	0.05
	Hexachloro-1,3-butadiene		0.5	0.05
	Hexachloroethane		3.0	0.05
	Nitrobenzene		2.0	0.05
	Pentachlorophenol		100.0	0.25
	Pyridine		5.0	0.05
	2,4,5-Trichlorophenol		400.0	0.25
	2,4,6-Trichlorophenol		2.0	0.05

[1]"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November, 1986.

[2]Not Applicable

[3]Analyses for TCLP parameters are consistent with criteria specified in Section 8.2.5 of SW-846 method 1311 which was added by a technical correction to the Toxicity Characteristic Final Rule June 29, 1990 (55FR 26 986), and in EPA document 40 Code of Federal Regulations (CFR) Part 261.24.

[4]Detection Limits are practical quantitation limits (PQLs). Actual detection limits may vary due to matrix interferences.

[5]Cannot be separated.

batch of twenty laboratory samples will be analyzed. Analysis will meet the criteria presented in the appropriate methods identified in Section G.8.0.

The method accuracy (percent recovery) for water and soil samples will be determined by spiking selected samples with test compounds. Accuracy will be reported as the percent recovery of the test compound and will meet the criteria given in the appropriate methods, as identified in Section G.8.0.

G.4.3 COMPLETENESS, REPRESENTATIVENESS AND COMPARABILITY

It is expected that all analyses conducted in accordance with USEPA Methods will provide data meeting QC acceptance criteria for eighty percent of all samples tested. Any reasons for variances will be documented.

The sampling networks have been designed to provide further refinement of contaminant boundaries. During development of these networks, consideration was given to past disposal practices, existing data from past studies completed for the Site, remedial activities to date and physical setting. The extent to which existing and planned analytical data will be comparable depends on the similarity of sampling and analytical methods. The procedures used to obtain the planned analytical data are documented in this QAPP. However, it may be necessary to verify similar documentation for previous analytical data to adequately establish comparability. Comparability

of laboratory analyses will be ensured by the use of consistent units and methods. Following completion of data collection, the existing data base will be evaluated for representativeness.

G.4.4 FIELD MEASUREMENTS

Measurement data will be generated in many field activities. These activities include, but are not limited to, the following:

i) documenting time and weather conditions; and

ii) observation of soil/solid waste, and liquid samples, sample appearance, and other conditions.

The general QA objective for such measurement data is to obtain reproducible and comparable measurements to a degree of accuracy consistent with the use of standardized procedures.

G.5.0 SAMPLING PROCEDURES

The procedures for collecting soil samples and for performing all related field activities are described in detail in the Sampling and Analysis Plan presented in Section 6.0 of the CSI Work Plan.

G.6.0 SAMPLE CUSTODY AND DOCUMENT CONTROL

G.6.1 CHAIN-OF-CUSTODY

A CRA chain-of-custody record will be used to track all samples from time of collection to the arrival of the samples at the laboratory. Each sample will be properly sealed. Sample container labels will be firmly affixed to the sample containers, and will include sample number, place of collection and date and time of collection.

Each sample container being shipped to the project labortory will contain a chain-of-custody document. The chain-of-custody document consists of four copies which are distributed to the shipper, the receiving laboratory, the project laboratory, and the CRA office file. The shipper will maintain his copy while the other three copies are enclosed in a waterproof envelope within the cooler with the samples. The laboratory, upon receiving the samples, will complete the three remaining copies. The laboratory will maintain one copy for their records. One copy will be returned to CRA with the data deliverables package. Field custody procedures are further described in Section 6.9.3 of the CSI Work Plan. Each sample number of each sample shipped will be recorded on the sheet. The container will then be sealed properly for shipment.

Upon receipt of the container at the laboratory, the container will be inspected by the designated sample custodian. The condition of the container will be noted on the chain-of-custody record sheet

by the sample custodian. The sample custodian will document the date and time of receipt of the container, and sign the form.

If damage or discrepancies are noticed, it will be recorded in the remarks column of the record sheet, dated and signed. Any damage or discrepancies will be reported to the Lab Supervisor who will inform the Lab Manager and QA Officer.

G.6.2 SAMPLE DOCUMENTATION IN THE LABORATORY

The sample custodian will assign a unique number to each incoming sample for use in the laboratory. The unique number and customer number will then be entered into the sample receiving log. The laboratory date of receipt will also be noted.

The project laboratory will be responsible for maintaining analytical log books and laboratory data as well as a sample (on hand) inventory for submittal to CRA on an "as required" basis. Samples will be maintained by the laboratory for a period of 30 days, under the conditions prescribed by the appropriate USEPA methods, for additional analyses, if necessary. The sample aliquots that will be extracted and archived for the verticle soil delineation purpose will be maintained by the laboratory for a period of 40 days, under the appropriate conditions. Raw laboratory data files will be inventoried and maintained by the project laboratory for a period of

five years at which time CRA will advise regarding the need for additional storage.

G.6.3 STORAGE OF SAMPLES

After the sample custodian has prepared the log book, the chain-of-custody will be checked to ensure that all samples are stored in the appropriate locations. All samples will be stored within an access controlled custody room and will be maintained at 4°C until completion of all analytical work or, as a minimum, for 30 days.

The sample extraction aliquots for the verticle soil delineation will be archived for 40 days.

G.6.4 SAMPLE DOCUMENTATION - CRA

Evidentiary files for the entire project will be inventoried and maintained by CRA and will consist of the following:

- Project Plan;
- Project Logbooks;
- Field Data Records;
- Sample Identification Documents;
- Chain-of-Custody Records;

- Correspondence;
- Report Notes, Calculations, etc.;
- References, Literature;
- Miscellaneous - photos, maps, drawings, etc.; and
- Final Report.

The evidentiary file materials will be the responsibility of the project coordinator with respect to maintenance and document removal.

G.7.0 CALIBRATION PROCEDURES AND FREQUENCY

The procedures indicated below will be performed for all samples delivered for analysis to the project laboratories. Specific instructions relevant to a particular type of analysis are given in the pertinent analytical procedures for this project, and are referenced in Section G.8.0.

The instruments will be calibrated on each day that analyses will be performed. The analyst will tune and calibrate the instrument and complete calibration records for the project file.

All quality control data and records produced from calibration and tuning will be retained by the laboratory and will be made available to CRA on an "as required" basis.

The following specific analytical quality control procedures are related to each analytical batch.

G.7.1 TUNING

Prior to initiating analysis, it is required to establish that a given instrument meets the methologic tuning standard.

G.7.1.1 Tuning Instrument For Organic Analysis

The following requirements will be applied to those samples analyzed by gas chromatography/mass spectrometry (GC/MS). The calibration of these instruments will be verified at frequencies specified in the methods referenced in Section G.8.0. Where appropriate, a new standard curve may be prepared as specified in the methods.

The tune of each GC/MS system used for the determination of organic analytes will be checked with 4-Bromofluorobenzene (BFB) for determination of volatile compounds and with decafluorotriphenylphosphine (DFTPP) for determination of semi-volatile compounds. The ion abundance criteria required by the method will be met before determination of any analytes. If the system does not meet the required specification of one or more of the specified ions, the instrument will be retuned and rechecked before preceding with sample analysis. The tune performance check criteria will be achieved on a daily basis.

G.7.2 CALIBRATION

Prior to analysis, instruments will be calibrated for organics, metals and general chemistry parameters utilizing the procedures specified for each method of analysis referenced in Section G.8.0.

G.7.2.1 Calibration Check

Method mandated compounds will be used to check calibration of the instrument being used. A calibration check will be conducted prior to any batch analysis with recovery data being within the method established control limits prior to sample analysis.

G.7.2.2 Standard Curves for Inorganic Analysis

Standard curves used in the determination of inorganic analytes will be prepared as follows:

Typically, standard curves derived from data consisting of one reagent blank and a minimum of three concentrations will be prepared for each inorganic analyte. The standard curve will be used with each subsequent analysis, provided the standard curve is verified by using at least one reagent blank and one standard at a level normally encountered or expected in such samples. If the results of the verification are not within +/- 10% of the original curve, a new standard will be prepared and analyzed. If the results of the second verification are not within +/-10% of the original standard curve, a reference standard will be used to determine if the discrepancy is with the standard or with the instrument. New standards will also be prepared on a quarterly basis at a minimum. All data used in drawing or describing the curve will be so indicated on the curve or its description. A record will be made of the verification.

G.8.0 ANALYTICAL PROCEDURES

This section presents the analytical methods which will be employed by the project laboratory to complete all required analyses.

G.8.1 OVERVIEW

The liquid, soil and solid waste samples collected for chemical analyses will be analyzed using SW-846 methods. All analyses will be performed in a manner consistent with the analytical methods listed in Table G.4.3.

G.8.2 IDENTIFICATION

Identification of all targeted analytes will be accomplished with an authentic standard of the analyte. When authentic standards are not available, identification will be considered tentative.

For gas chromatographic (GC) determinations of specific analytes, the relative retention time of the unknown will be compared with that of an authentic standard. Since a true identification by GC is not possible, an analytical run for compound confirmation will be followed according to the specifications in the methods. Peaks must elute within daily retention-time windows established for each indicator parameter to be

declared a tentative or confirmed identification. Retention time windows are determined by a standard 72-hour study defined in each method. Results of the study are to be filed in the laboratory and available for inspection during a QC audit.

For gas chromatographic/mass spectrometric determinations of specific analytes, the spectrum of the analyte will conform to a literature representation of the spectrum or to a spectrum of the authentic standard obtained after satisfactory tuning of the mass spectrometer. The appropriate analytical methods will be consulted for specific criteria for matching the mass spectra, relative response factors, and relative retention times to those of authentic standards.

G.8.3 QUANTIFICATION

The procedures for quantification of analytes are discussed in the appropriate specific analytical methods.

G.8.4 DETECTION LIMIT AND QUANTIFICATION LIMIT

The targeted detection limits for chemical analyses were previously presented on Table G.4.3. Specific detection limits are highly matrix dependent. The detection limits in Table G.4.3 are provided for guidance and may not always be technically achievable.

G.9.0 DATA REDUCTION, VALIDATION, ASSESSMENT AND REPORTING

The project laboratory will perform analytical data reduction and validation in-house under the direction of the laboratory QA Officer. The laboratory QA Officer will be responsible for assessing data quality and advising of any data which were rated "preliminary" or "unacceptable" or other qualifications based on the QC criteria outlined in USEPA SW-846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (3rd edition), November 1986 which would caution the data user of possible unreliability. Figure G.9.1 illustrates analytical data flow through the laboratory. Data reduction, validation, and reporting by the laboratory will be conducted as detailed in the following. It should be noted, however, that "sign-off" will be required following completion of each step.

- Raw data produced and checked by the responsible analyst is turned over for independent review by another analyst.

- The area supervisor reviews the data for attainment of quality control criteria presented in the referenced analytical methods.

- Upon completion of all reviews and acceptance of the raw data by the laboratory operations manager, a computerized report will be generated and sent to the laboratory QA Officer.

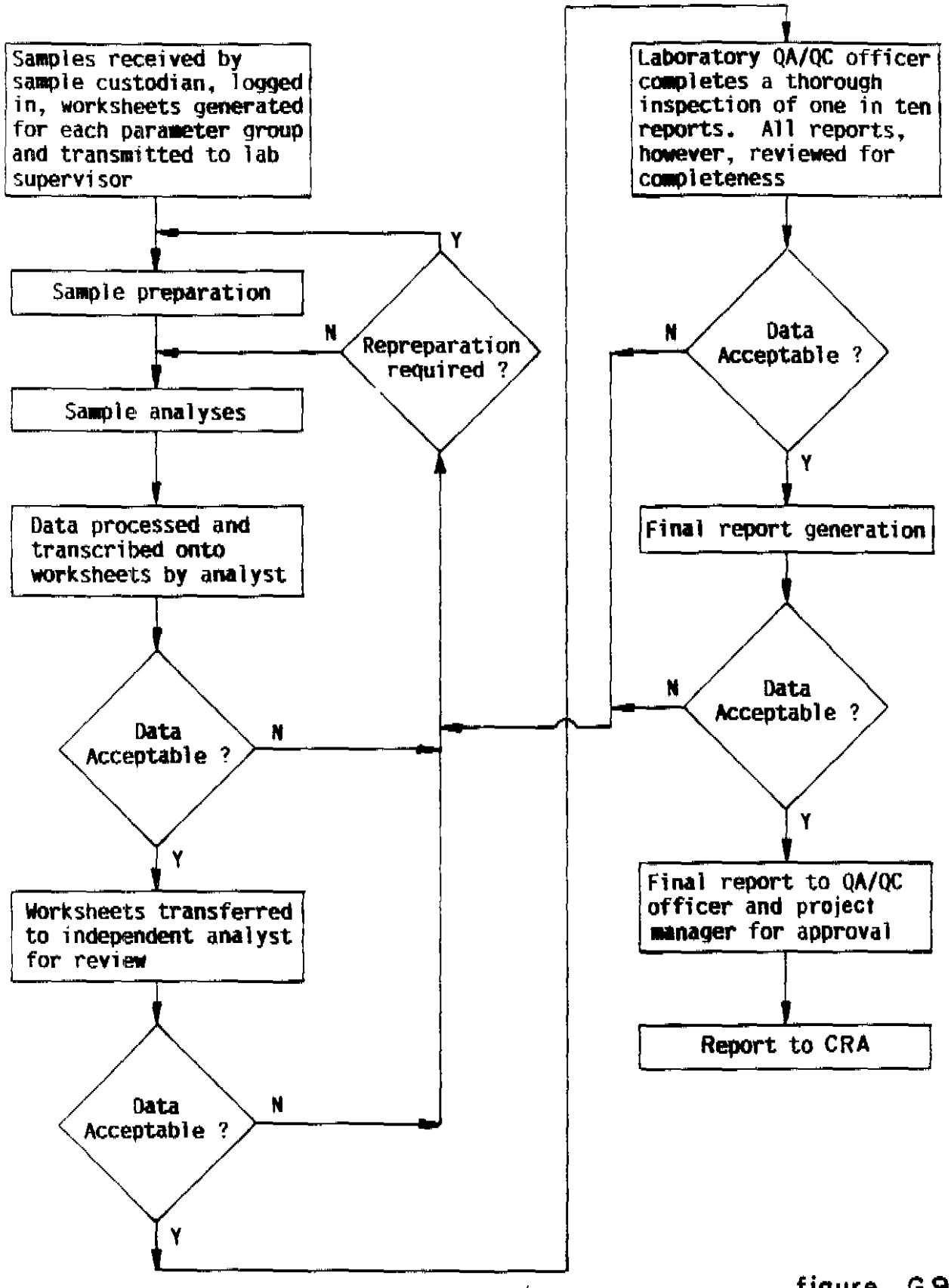

figure G.9.1

ANALYTICAL DATA FLOW
CALDWELL SYSTEMS, INC. SITE
Lenoir, North Carolina

CRA

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- The laboratory QA Officer will complete a thorough inspection of all reports.

- The QA Officer and area supervisor will decide whether any sample re-analysis is required.

- Upon acceptance of the preliminary reports by the QA officer, final reports will be generated and signed by the laboratory manager.

CRA's QA/QC Officer will conduct an evaluation of data reduction and reporting by the laboratory. These evaluations will consider the finished data sheets, rinsate blank data, and recovery data for surrogate and matrix spikes. The material will be checked for legibility, completeness, correctness, and the presence of requisite dates, initials, and signatures. The results of these checks will be assessed and reported to the project manager noting any discrepancies and their effect upon the acceptability of the data. All information garnered from QA/QC checks will be discussed in the final Report.

Validation of the analytical data will be performed by the CRA/QA Officer-Analytical Activities based on the QC criteria outlined in "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses", February 1, 1988 and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988. Assessment of analytical and field data will include checks for data consistency by looking for potential sample contamination as indicated by results of rinsate blank

sample analyses, laboratory QA procedures, adherence to accuracy and precision criteria, transmittal errors, and anomalously high or low parameter values. The results of these data validations will be reported to the project managers, noting any discrepancies and their effect upon acceptability of the data.

Raw data from sample collection activities that are used in project reports will be appropriately identified and appended to the report. Where data have been reduced or summarized, the method of reduction will be documented in the report.

G.10.0 INTERNAL QUALITY CONTROL CHECKS AND FREQUENCY

This section presents the internal quality control checks and frequency procedures which will be employed for laboratory measurements.

G.10.1 LABORATORY QC

Specific procedures related to internal laboratory QC samples (namely, matrix spikes, surrogate spikes, blanks, QC check samples and matrix spike duplicates) are detailed in the following subsections.

The internal QC checks for the VOC, BNA, PCB/Pesticides, herbicides, metals and general chemistry parameters will follow the appropriate methods specified in Table G.4.3.

G.10.1.1 Initial and Continuing Calibration Checks

The compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data. The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an analysis run, while the continuing calibration checks document that the initial calibration is still valid, and that satisfactory maintenance and

adjustment of the instrument on a day-to-day basis is achieved. The specific control criteria and action requirements for these calibrations will be assessed as specified in "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses", February 1, 1988 and in "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988.

G.10.1.2 Internal Standards Performance

The internal standards performance criteria ensure that GC/MS sensitivity and response was stable during every run. As specified in "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses", February 1, 1988, the control criteria stated that the internal standard area counts must not vary by more than a factor of two (-50% to + 100%) from the associated calibration standard, and that the retention time of the internal standard must not vary more than +30 seconds from the associated calibration standard. For standards that violate this criteria, appropriate data qualification, as detailed in the above referenced document, will be performed.

G.10.1.3 Method Blank Samples

A method blank sample will be analyzed by the laboratory at a frequency of one blank per twenty analyses or, in the event that an analytical round consists of less than twenty samples, one method blank sample will be analyzed. The method blank sample, an aliquot of analyte-free

water or solvent, will be carried through the entire analytical procedure. Upon examination of the results obtained by the laboratory, if a method blank is found to contain any of the target analytes, the procedure described in Section G.4.1, will be performed.

G.10.1.4 Matrix Spikes/Matrix Spike Duplicate Samples

An MS/MSD sample set will be analyzed at a minimum frequency of 1 per 20 investigative samples. Acceptable criteria and compounds that will be used for matrix spikes are identified in the appropriate methods (see Section G.8.0). Table G.10.1 presents a summary of the compounds and acceptable criteria. Percent spike recoveries will be used to evaluate analytical accuracy while percent relative standard deviation or percent difference between the spike and matrix spike duplicate will be used to assess analytical precision.

G.10.1.5 Surrogate Compounds

Surrogate compounds are used in all GC/MS and GC analyses. Every blank, standard and environmental sample, including MS/MSD samples, will be spiked with surrogate compounds prior to purging volatiles or extracting semi-volatiles.

Surrogate compounds will be spiked into samples according to the appropriate analytical methods. Surrogate compounds percent recoveries will fall within the control limits set by procedures

TABLE G.10.1

MATRIX SPIKE/MATRIX SPIKE DUPLICATE COMPOUNDS
PERCENT RECOVERY CONTROL LIMITS
CSI SITE
LENOIR, NORTH CAROLINA

Matrix Spike Compound	*Water Recovery(%) Control Limits*	*Soil Recovery(%) Control Limits*
Volatiles:		
1,1-Dichloroethene	71 - 121 (20)[1]	61 - 143 (25)
Trichloroethene	80 - 117 (20)	83 - 117 (25)
Chlorobenzene	90 - 110 (20)	87 - 113 (25)
Toluene	87 - 111 (20)	78 - 127 (25)
Benzene	84 - 111 (20)	77 - 122 (25)
Semi Volatiles:		
1,2,4 -Trichlorobenzene	39 - 98 (28)	38 - 107 (23)
Acenaphthene	46 - 118 (31)	31 - 137 (19)
2,4-Dinitrotoluene	24 - 96 (38)	28 - 89 (47)
Pyrene	26 - 127 (31)	35 - 142 (36)
N-Nitroso-di-n-Propylamine	41 - 116 (38)	41 - 126 (38)
1,4-Dichlorobenzene	36 - 97 (28)	28 - 104 (27)
Phenol	12 - 89 (42)	26 - 90 (35)
2-Chlorophenol	27 - 123 (40)	25 - 102 (50)
4-Chloro-3-methylphenol	23 - 97 (42)	26 - 103 (33)
4-Nitrophenol	10 - 80 (50)	11 - 114 (50)
Pentachlorophenol	9 - 103 (50)	17 - 109 (47)
Pesticides:		
gamma-BHC (Lindane)	56 - 123 (15)	46 - 127 (50)
Heptachlor	40 - 131 (20)	35 - 130 (31)
Aldrin	40 - 120 (22)	34 - 132 (43)
Dieldrin	56 - 126(18)	31 - 134 (38)
Endrin	56 - 121 (21)	42 - 139 (45)
4,4'-DDT	38 - 127 (27)	23 - 134 (50)

TABLE G.10.1

MATRIX SPIKE/MATRIX SPIKE DUPLICATE COMPOUNDS
PERCENT RECOVERY CONTROL LIMITS
CSI SITE
LENOIR, NORTH CAROLINA

Matrix Spike Compound	*Water Recovery(%) Control Limits*	*Soil Recovery(%) Control Limits*
PCB/Pesticides		
gamma-BHC (Lindane)	56 - 153 (15)	46 - 127 (50)
Heptachlor	40 - 131 (20)	35 - 130 (31)
Aldrin	40 - 120 (22)	34 - 132 (43)
Dieldrin	52 - 126 (18)	31 - 134(38)
Endrin	56 - 121 (21)	42 - 139 (45)
4,4'-DDT	38 - 127 (27)	23 - 134 (50)

[1]Values in parentheses indicate maximum acceptable relative percent difference (RPD) between duplicate analyses.

specified in the method for analytes falling within the quantification limits without dilution. Dilution of samples to bring the analyte concentration into the linear range of calibration may dilute the surrogates out of the quantification limit; assessment of analytical quality in these cases will be based on the quality control embodied in the check, matrix spike and matrix spike duplicate samples.

Table G.10.2 presents a summary of the surrogate compounds and recovery control limits as stated within the analytical methods.

G.10.1.6 Laboratory Duplicate Analysis

Laboratory duplicate analyses are indicators of laboratory precision based on each sample matrix used for inorganic analyses associated with this project. Specified control criteria and action levels will be consistent with that specified in "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988.

G.10.1.7 Blind Check Samples

As supplied by the agencies, an analytical batch may contain a blind check sample. In general, the blind check sample will be obtained from USEPA and supplied to CRA. The analytes employed in this check sample will be a representative subset of the analytes of interest.

TABLE G.10.2

SURROGATE COMPOUNDS PERCENT RECOVERY CONTROL LIMITS
CSI SITE
LENOIR, NORTH CAROLINA

	Water Recovery (%) Control Limits	*Soil Recovery (%) Control Limits*
Volatiles:		
Toluene-d_8	88-110	81-117
Bromofluorobenzene	86-115	74-121
1,2-Dichloroethane-d_4	76-114	70-121
Semi-Volatiles:		
Nitrobenzene-d_5	35-114	23-120
Terphenyl-d_{14}	33-141	18-137
2-Fluorobiphenyl	43-116	30-115
Phenol-d_5	10-94	24-113
2-Fluorophenol	21-100	25-121
2,4,6-Tribromophenol	10-123	19-122
PCB/Pesticides:		
Dibutylchlorendate	24-154	20-150
2,4,5,6-tetrachloro-meta-xylene	47-125	33-120

Standard deviations and relative standard deviations will be calculated for the percent recovery of analytes from the blind check samples. These are defined in Section G.13.2.

G.11.0 PERFORMANCE AND SYSTEM AUDITS AND FREQUENCY

For the purpose of external evaluation, performance evaluation check samples from the USEPA and various State agencies are analyzed periodically by the project laboratory.

Internally, the evaluation of data from these samples is done on a continuing basis over the duration of a given project.

The QA Officer may carry out performance and/or systems audits to insure that data of known and defensible quality consistently are produced during a program.

Systems audits are qualitative evaluations of all components of field and laboratory quality control measurement systems. They determine if the measurement systems are being used appropriately. The audits may be carried out before all systems are operational, during the program, or after the completion of the program. Such audits typically involve a comparison of the activities given in the QA/QC plan described herein, with activities actually scheduled or performed. A special type of systems audit is the data management audit. This audit addresses only data collection and management activities.

The performance audit is a quantitative evaluation of the measurement systems used for a monitoring program. It requires testing the measurement systems with samples of known composition or behavior to

evaluate precision and accuracy. A performance audit will be carried out by or under the auspices of the QA Officer without the knowledge of the analyst during each sampling event for this program.

In addition, one external QA audit will be conducted by CRA prior to the analysis of any investigatory samples. It should be noted, however, that any additional external QA audits will be performed only if deemed necessary by CRA project managers or the CRA QA Officer. The project laboratory may also undergo QC audit(s) by the USEPA, if so requested.

G.12.0 PREVENTIVE MAINTENANCE

All analytical instruments to be used in this project will be serviced by laboratory personnel at regularly scheduled intervals in accordance with the manufacturers recommendations. Instruments may also be serviced at other times due to failure. Requisite servicing beyond the abilities of the project laboratory personnel will be performed by the equipment manufacturer or their designated representative.

Daily checks of each instrument will be performed by the analyst who has been assigned responsibility for that instrument. This will include changing GC inlet liners, checking operation of data systems, checking for leaks, etc. Manufacturer's recommended procedures will be followed in every case.

G.13.0 SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY, AND COMPLETENESS

G.13.1 QA MEASUREMENT QUALITY INDICATORS

G.13.1.1 Precision

Precision will be assessed by comparing the analytical results between replicate samples.

G.13.1.2 Accuracy

Accuracy will be assessed by comparing a set of analytical results to the accepted or "true" values that would be expected. In general, matrix spike, matrix spike duplicates and check sample recoveries will be used to assess accuracy.

G.13.1.3 Outliers

Procedures discussed previously will be followed for documenting deviations. In the event a result deviates significantly from established control limits (USEPA SW-846, 3rd Edition), this deviation will be noted and its effect on the quality of the remaining data assessed and documented.

G.13.2 STATISTICAL EVALUATIONS

In examination of data and determination of its precision and accuracy, standard statistical formulae will be used.

G.13.2.1 Arthmetic Mean

The arithmetic mean is the average obtained by dividing a sum by the number of its addends. A number of recovery results are averaged together to improve the accuracy of the measurement. Figure G.13.1, equation 1 summarizes the formula to be used to determine the arithmetic mean.

G.13.2.2 Standard Deviation

The standard deviation is the square root of the average squared difference between the individual values and the average value. A number of recovery results are evaluated to find the numerical variation in the data which is then used in the determination of the percent relative standard deviation. Figure G.13.1, equation 2 summarizes the formula to be used to determine the standard deviation.

Equation 1 Determination of Arithmetic Mean ($\bar{X}$)

$$\bar{X} = \frac{\sum_{i=1}^{n} X_i}{n}$$

where n = number of measurements
x_i = value of measurements

Equation 2 Determination of Standard Deviation (σ_{n-1})

$$\sigma_{n-1} = \sqrt{\frac{\sum_{i=1}^{n} (X_i - \bar{X})^2}{n - 1}}$$

where n = number of measurements
x_i = value of measurements

Equation 3 Determination of Percent Relative Standard Deviation (% RSD)

$$\% \text{ RSD} = \frac{\sigma_{n-1}}{\bar{X}} \times 100$$

where σ_{n-1} = standard deviation
$\bar{X}$ = arithmetic mean

Equation 4 Determination of Percent Recovery (%R)

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where SSR = Spiked Sample Result
SR = Sample Result or Background
SA = Spike Added

Equation 5 Determination of Relative Percent Difference (RPD)

$$RPD = \left(\frac{|R_1 - R_2|}{\frac{R_1 + R_2}{2}} \right) \times 100$$

where R_1 = value of first result
R_2 = value of second result

figure G.13.1

STATISTICAL FORMULAE
CALDWELL SYSTEMS, INC. SITE
Lenoir, North Carolina

CRA

G.13.2.3 Percent Relative Standard Deviation (%RSD)

The % RSD is the percentage obtained by dividing the standard deviation of the values by the arithmetic mean of the values. The %RSD is calculated on a series of measurements to evaluate an instrument's analytical precision (e.g., initial calibration). Figure G.13.1, equation 3 summarizes the formula to be used to determine %RSD.

G.13.2.4 Percent Recovery (%R)

The percent recovery of a parameter is the percentage obtained by dividing the amount recovered by the true amount added. The percent recovery of spiked samples are evaluated to establish the analytical accuracy of a measurement. Figure G.13.1, equation 4 summarizes the formula to be used to determine the percent recovery.

G.13.2.5 Relative Percent Difference (RPD)

The RPD is the percentage obtained by dividing the difference of two numbers by their arithmetic mean. The RPD is used to evaluate the analytical precision of two replicate measurements (e.g., matrix spike/matrix spike duplicate). Figure G.13.1, equation 5 summarizes the formula to be used to determine RPD.

G.14.0 CORRECTIVE ACTION

The need for corrective action may be identified by system or performance audits or by standard QC procedures. The essential steps in the corrective action system will be:

- Checking the predetermined limits for data acceptability beyond which corrective action is required;

- Identifying and defining problems;

- Assigning responsibility for investigating the problem;

- Investigating and determining the cause of the problem;

- Determination of a corrective action to eliminate the problem (this may include reanalysis or resampling and analysis);

- Assigning and accepting responsibility for implementing the corrective action;

- Implementing the corrective action and evaluating the effectiveness;

- Verifying that the corrective action has eliminated the problem; and

- Documenting the corrective action taken.

For each measurement system, the QA Officer will be responsible for initiating the corrective action and the laboratory supervisor will be responsible for implementing the corrective action.

G.15.0 QUALITY ASSURANCE REPORT TO MANAGEMENT

Management will receive reports on the performance of the measurement system and the data quality following each sampling round and at the conclusion of the project.

Minimally, these reports will include:

- Assessment of measurement quality indicators, i.e., data accuracy, precision and completeness;

- Results of system audits; and

- QA problems and recommended solutions.

The project QA Officer will be responsible within the organizational structure for preparing these periodic reports. The final report for the project will also include a separate QA section which will summarize data quality information contained in the periodic QA/QC reports to management, and detail an overall data assessment and validation in accordance with the data quality objectives outlined in this QAPP.

PLEASE SEE OTHER MATERIALS

MAPS IN THE BOOK

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